

THE
JUNIOR HIGH SCHOOL
IDEA

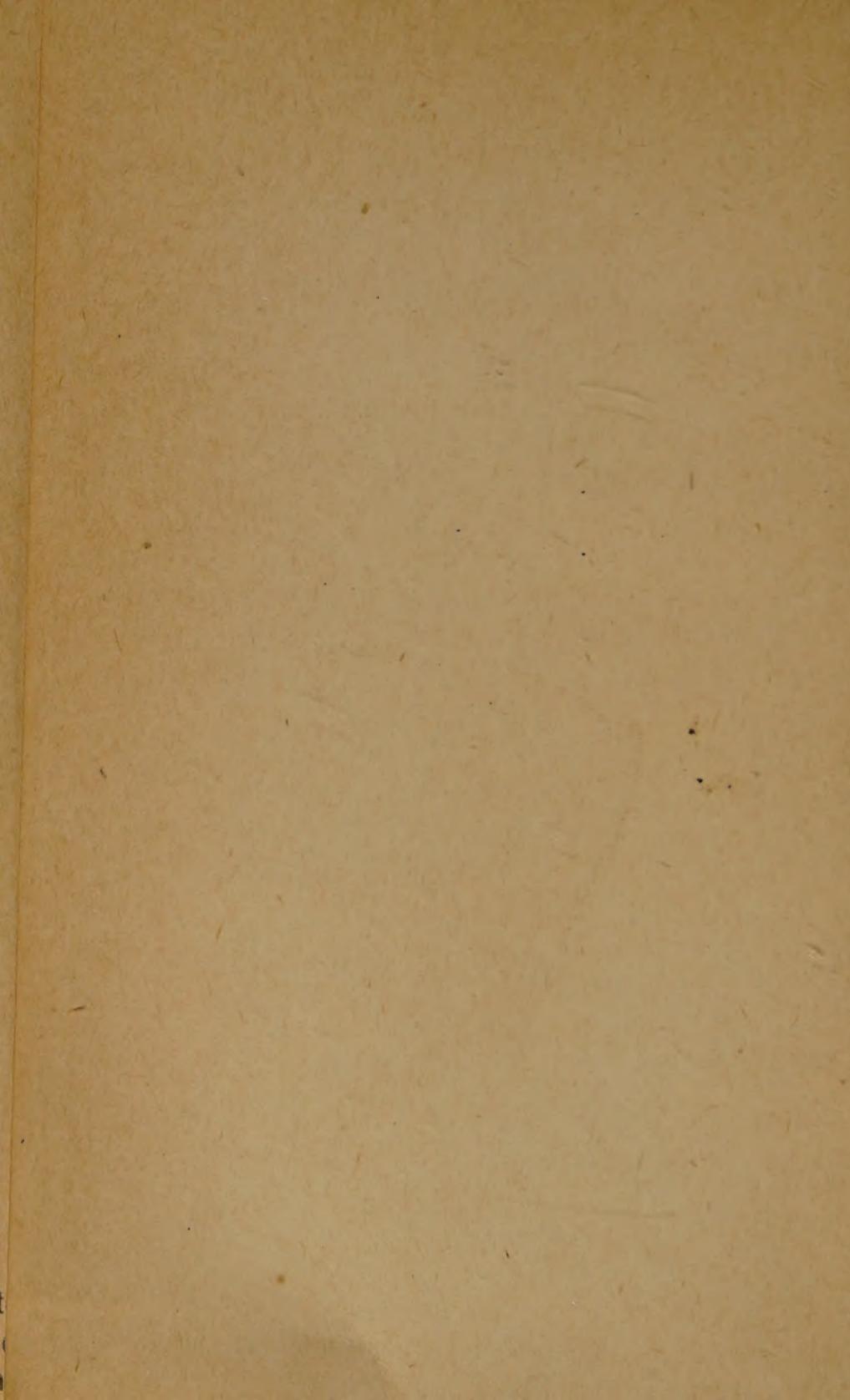
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THE JUNIOR HIGH SCHOOL IDEA

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CHAPTER A INTRODUCTION

IT is said that any one really wishing to get the point of view of any serious study, whether it be in text-book form or not, should study the preface and the table of contents carefully, before beginning the first chapter. Most of us, however, are too impatient to begin the book we have selected to read, and to get directly to the story or explanation that concerns us, to be as careful in these matters as the experts tell us we should.

Because most of us may prefer the direct attack in this discussion of the purposes and practices of modern junior high school, we shall include in this, our first chapter, such preface or introduction as may be necessary.

At Speyer Experimental Junior High School in New York City, where the aims and practices that we shall discuss have been or are being worked out, we have a peculiarly managed school. The principal and teachers are paid by the City of New York as in all other public schools. The educational direction of the school, the selection of the program of studies and the various courses, however, have been under the immediate supervision of Teachers College, Columbia University, with Professor Thomas H. Briggs as its representative in the field. Teachers College owns the Speyer building, the gift of Mr. James Speyer of New York City.

Speyer School therefore has been developed and is developing as an experimental school where, under Professor Briggs' direction, the principal and teachers have been wholly free to work out such administrative methods and such courses of study as seemed best fitted to secure the results desired.

The six hundred pupils have been public school boys (and for a time girls also) selected from some twenty neighboring elementary schools because of their promise of school success. On the whole, the pupils have been above the average New York City boys of their age in general intelligence.

The twenty teachers too are above the average, having been selected for initiative, knowledge of subject matter, a willingness to try eagerly and honestly such innovations as have been proposed, and above all, for that professional spirit that leads them to consider first most carefully the reasons why a thing should be done at all, and then being satisfied on that point to do that thing as well as in them lies.

The general aim of Speyer School as stated by Professor Briggs and accepted by the faculty and pupils of the school has been:

First: "To teach pupils to do better those desirable activities that they will do anyway and to teach these by means of material in itself worth while."

Second, "To reveal higher types of activities and to make these both desired and, to an extent, possible."

For the sake of our discussions that follow, let us accept this aim and keep it more or less in mind in all that we are to read over, for it may help us to appreciate a point of view that may appear more or less fre-

quently in the chapters that follow. It may help us also when later we come to a discussion of the actual class room material in the five or more subjects of study or lines of work, as English, mathematics, etc., etc., if we remember that here we shall not attempt to consider all the well known and accepted aims for each subject, but rather to select for emphasis only the predominant aim or aims that we may agree should characterize this work in a modern junior high school, whether those aims be new or old.

With the exception of some parts of a single chapter (the one on Introductory Social Science), all that follows is not simply theory, but rather theory applied to the actual administration and operation of the school and class room work. With that single exception (which we hope will not long continue as such) all that we shall discuss is either actually being accomplished or at least is being honestly attempted in the various classes of Speyer School. If, as in the case with Manual Training (shop work) for boys and Domestic Science (cooking and sewing) for girls, a chapter is conspicuous by its absence, it is because our physical limitations at Speyer School—a small building, greatly overcrowded—prevent us from working out our theories in practice. Similarly in the case of Commercial Work, where the number of students electing this course of study is too small to permit of profitable experimentation, at Speyer School, all discussion is omitted.

If these omissions seem to weaken our discussion, they nevertheless may be admitted to strengthen it too by entirely eliminating a discussion of "What might be done" as contrasted with what *is* being done. Therefore in all our work we shall try to keep our feet continuously on the solid ground of actual practice, believing that, on the

whole, this method will make our discussions of more lasting value.

Let it be understood, however, that at Speyer School we are working, even with all our freedom, under limitations of many kinds depending upon equipment, frequent changes in our teaching staff, difficulties in securing suitable text-books, etc., etc.,—just such limitations as hamper the work of many other schools. We therefore suffer from no misconceptions as to our perfection, nor have we been able to accomplish all that we might have wished. We have had to temporize over and over again in order to meet conditions that actually exist.

And yet the various principles as they are developed in this book will not be academic theories, but rather the statement of our accepted aims now followed in all our Speyer School work. So far as our limitations permit we are working out in actual daily practice the type of work this book portrays.

In the arrangement of the book itself, the author has profited by many helpful criticisms made by Professor Thomas H. Briggs of Teachers College, New York, and by Dr. Thomas W. Gosling, State Supervisor of Secondary Education, Madison, Wisconsin. To these gentlemen the reader, as well as the author, is greatly indebted.

Finally, we must not forget that at our present stage of educative progress we have almost as many kinds of junior high schools as we have individual principals. This is far from being a condition for which any apology is needed. On the contrary, if each school be considered for a time an experiment station for finding the best way for ministering to the needs of the pupils of its locality, we have a high degree of probability that the related, the classified, total experiences of these various schools will enable us in the not very far distant future to

reach conclusions as to aim and content far more accurate and far more valuable than those attainable by any small central group which may prescribe uniform courses at this time.

May it be some years before any one shall be permitted to say, "This at last is a junior high school, just this and nothing else—definite in curriculum, definite in subjects of study, fixed now for a generation at least." For the present, let us consider the untold possibilities for good that may result if we permit our youngest child the unconventionalities characteristic of childhood and growth, glorying in, rather than grieving over, his inconsistencies and the length of his formative period.

1. How is Speyer School conducted?
2. Is there a possibility of conducting a similar experimental school in my own school system?
3. What educational institution could be called upon to assist if my board of education would consent to such joint control?
4. What are the particular qualifications to be sought in the principal and teachers of a junior high school?
5. What is Professor Briggs' definition of the educational purpose of a junior high school?
6. How does this definition differ from others that have been given?
7. What is meant by "those desirable activities" that our pupils will pursue anyway?
8. What is the meaning of "material in itself worth while"?
9. What "higher types" of activities may the junior high school reveal?
10. Why will discussions of work in Manual Training and in Commercial Studies be omitted from this book?

CHAPTER I

THE JUNIOR HIGH SCHOOL IDEA

THE school superintendent of a large and prosperous suburban district recently visited one of New York's most successful junior high schools for the purpose of gathering material to use in arguing against the advisability of initiating any such innovation in the school system he supervised. It appeared that the school board of his city had suggested the possibility of opening this type of school, but the superintendent, with a large system splendidly organized, running smoothly and efficiently, looked askance upon any innovation that might, he feared, destroy the organization he had so carefully built up. However, only one morning spent in visiting the junior high school in question was necessary to convince this man that the new type of school, however incomplete in its present development, would still be of distinct value to any system. As a result of this one visit the superintendent concerned became an enthusiastic convert to the junior high school idea.

In many cases it must be admitted the demand for junior high schools comes from other than educational reasons. It may be that the least worthy of these demands comes from the school boards that wish junior high schools introduced in their school system simply because they appear to be coming into style, or because they have heard that a rival city was putting them in operation. A more forceful demand comes from the

school board that believes it possible to save money by educating a large fraction of their present high school population in elementary school buildings.

The growing demand by American parents everywhere for increased opportunities in secondary school education for their children has taxed all existing high schools to their utmost. To build new high schools (expensive buildings even when most economically built) would require that relatively high sums would have to be raised by taxation.

A study of the pupils enrolled in our American high schools has shown that nearly half of all our high school pupils are found in the first high school, or ninth school year. If only these ninth year pupils could be held one year more in the elementary schools, it has been argued, then we would need not much more than half as great accommodations to house the remainder in high school buildings. In this way, after subtracting the ninth year pupils, one high school building could be made to do the work which under the old plan required two buildings.

Furthermore, high school teachers are generally paid better annual salaries than are paid to elementary school teachers. Nearly as many high school teachers are required to teach ninth year pupils today as are required to teach all the remaining pupils of the tenth, eleventh, and twelfth school years. If therefore, we could have these ninth year pupils taught and supervised by persons paid on a lower salary schedule, a decided saving in salaries could be added to the saving in school building construction.

However commendable may be the effort to serve the taxpayer's pocketbook, such a change can only be made at the expense of the school population. Slowly but surely the quality of the instruction in the lower school will dete-

riorate if a salary distinction is maintained, and while a saving in money is secured a loss in education is inevitable. Where junior high schools have been longer in operation, as in the Middle West, it has been found necessary to put the junior and senior high school teachers on an equal scholarship and salary basis. In the East it is fair to assume that there will be ultimately the same equality.

Perhaps the best picture of the situation toward which we are moving is given by Supt. Gosling, Supervisor of junior high schools in Wisconsin, who in his book on "Selection and Training of Teachers for Junior High Schools" is quoted by Briggs as saying:

"In the meantime the tendency manifest in some places to establish a salary schedule that is intermediate between the schedule of the elementary school and that of the senior high school is to be resisted strongly, because it not only fails to recognize the importance of the junior high school and the significant contributions of its teachers to the development of a difficult piece of work, but also it strikes at the stability of the new institution by the subtle suggestion to teachers that they may regard their position merely as a stepping-stone to the safe berth and the higher salary which the senior high school offers. In other words, the intermediate salary created a condition of unstable equilibrium, whereas fixedness, firmly based in high purposes persistently followed, is needed to develop the junior high school up to the full measure of its possibilities."

Supt. Gosling in his address to the Intermediate School Association of New York City, expressed his firm conviction that sooner or later to save the junior high schools for their special work the Eastern states would be obliged to follow the lead of Wisconsin and pay the same salaries in the junior and senior high schools.

The junior high school is not a money saving device, save possibly during the earlier years of its inception,

though even then the increased cost of equipping these schools easily outweighs their savings in teachers' salaries at least.

The truly educational demands for the initiation of junior high schools come from a desire to lessen or abolish the loss of power that seems inevitable between the old style elementary and old style high school. In the language of the automobile engineer the two older types (the elementary schools and the high schools) need to be united by a flexible coupling or universal joint rather than by a rigid shaft.

It is worth while for us to consider the situation as it exists in most of our Eastern school systems today.

The greatest contrast between the two older types of schools is found not, as one might assume, in their courses of study, but rather in their educational point of view. If we hesitate to accept this diagnosis of the essential difference a further examination of the facts may convince us.

In most of our elementary schools with an eighth year course, the seventh year practically completes the advance work — indeed a large part of this year's work is the review of the earlier grades. The eighth year is still more largely a reviewing year and the last half of the eighth year, just before graduation, is almost entirely given to review. Habit, tradition, printed "requirements for graduation" have all combined to make the eighth school year largely an end in itself, that end being "graduation" without any particular reference to the pupil's ability or fitness to make progress in any line once "graduation" is secured. It has been assumed that if a pupil knew enough "to graduate" he must of necessity know enough to continue his education in high school or to make a successful beginning as embryo artisan or tradesman.

However, the average elementary school has never taken any high degree of interest in the success of its pupils in doing the work that lay ahead of them after graduation. The one and only question was "graduation"—after that the deluge, if such must be. In any event *then* hands were clean—had not their pupils passed the exacting graduation examinations—(Here are the examination questions and the answer papers to prove it). In support of this position it is frequently contended that the elementary school is designed to provide "the tools of learning." When its pupils are so provided the elementary school has fulfilled its mission and may rest content.

Without undertaking to argue against this contention we might be tempted to ask if it is still reasonable to require the elementary school not merely to provide the tools of learning, but to give some attention to their probable use, after "graduation" is attained. However, when we consider the weight of tradition which binds teachers and superintendents to the custom of years, becomes more reasonable to assume that the creation of a new type of school to take over the work of the seventh and eighth school years will be an easier task than will be the conversion of the established schools from the habit of several generations. For so many years the higher grades of the elementary schools have been facing backward, that it seems an impossibility for any one to compel them to about face and look ahead. Rather than to attempt to convert the old type of elementary school can we not more easily provide a new type of school that faces front, whose concern is greater on the question what its pupils *will* do than it is upon the question what they *have* done? Would it not be helpful to us to have new schools whose interest was centered in helping its pupils to do better the things *ahead* of them rather

than in drilling its pupils upon what lay behind? To be sure in many cases success in the work ahead will depend upon success in holding in mind much that has been previously covered. Yet, when we examine the facts, the amount of such necessary preliminary information is, after all, astonishingly small. To read, to write, to compute arithmetically — to have some introductory knowledge of the globe and its inhabitants, may well be considered absolutely essential to successful entry into even the simplest lines of human endeavor. But with the completion of the sixth school year we have covered at least once most of the information that is indisputably essential from the standpoint of past performance. Is this not a good point at which to begin to give less attention to what we have done and more to what we can do?

Rather than to remodel our seventh and eighth years (an almost impossible task, we must admit) is it not easier for us to begin our seventh year with a clean slate and to build up as we progress a course of study, whether it be new or old, which is designed for the one great purpose of better fitting those who follow it to do better the work in school, or out, that lies just ahead?

If thus far we are in agreement, we have stated one of the fundamental reasons for adopting the junior high school idea.

A second fundamental reason arises from the situation in which our present elementary school graduate usually finds himself after "graduation," but before he actually enters any secondary school. Our pupil has now finished by "graduation" eight years of school work. This work has been for his entire school life uniform, prescribed, inevitable. Up to this point any choice as to the subject-matter to be studied has been wholly, or almost

wholly, denied. From the situation of blindfolded obedience to a prescribed course of study the pupil suddenly is unbandaged in the bright light of a wide range of choice in the school work he may next undertake. In many school systems the pupil must, if he continue his education, at once select one of the four or five high school courses that lie just ahead. These courses, variously designated as General, Scientific, Technical, Vocational (Trade), Commercial and by other names, differ decidedly among themselves in purpose and in instruction. To be sure the pupil through possible acquaintance with high school boys, or through the eleventh hour explanation of his former elementary school principal, has some vague idea of the nature and purpose of the various high school courses. However, he is on the whole densely ignorant of his own aptitudes and is without any trustworthy knowledge of himself on which to base his necessarily immediate selection. There has been no effort on the part of his school work or his school teachers to lead him gradually to a wise choice. He has not been given any glimpse of the work ahead — he only knows that, in the main, his new work will be different from that he has been following in the elementary school, how different, in subject-matter and method, he will soon learn to his extreme surprise.

Students of education have long felt that there was need for such a course of study in the seventh and eighth school years as might train pupils of those years to make a less random choice of the course they would pursue in the ninth and succeeding school years. The only method by which we have as yet felt sure a pupil could find his own capacities has been the method of trial and error—a faulty method at best, but a tremendously *costly* one when an error of choice has usually meant the

termination once and for all of that pupil's secondary school education. Yet in our American high schools, the country over, not more than one in five (more often not more than one in ten) completes the high school course of his election. On the whole, not half the pupils entering any high school complete even the work of the first two years. As a rule there are more high school pupils enrolled in the first school year than can be counted in the three remaining years combined. Admitting that we should be in error in attributing this tremendous high school mortality entirely to the faulty choice of course, we still may be within the bounds of probabilities if we maintain that the snap judgment, forced from the elementary school graduate, is no mean factor in his subsequent elimination. An exhaustive study of high school eliminations in New York City made some years ago clearly established the fact that many, if not most, of the pupils who failed in high school did so *not* because they were *unable* to do their work, but because they were *unwilling* to do it.

If we could only have a course of study for the seventh and eighth school years that made one of its chief aims training its pupils to find their own aptitudes, talents and preferences for further work and study, we would have a course of study unquestionably superior to the traditional seventh and eighth year work. While a school with such a new course would still have to employ to a large extent the old "trial and error" method, it would nevertheless have the trials made under such favorable circumstances that errors of choice could be corrected with a minimum of loss to the pupil himself.

Under our subsequent discussion we shall see that the junior high school undertakes to furnish just this range of experience (without specialization or immediate choice

of courses) that is necessary for each pupil, if he is to be given the slightest opportunity to make a reasonably safe selection of his further subjects of study. For our present purposes it is enough that we agree that it is both desirable and necessary in full justice to our present elementary pupils to give them somewhat extended school training in finding out what they may be able to do next, in school or out, with reasonable hopes of ultimate benefit to themselves and to their life work, while at the same time we prevent our pupils from being forced to an early choice.

Inasmuch as our new type of school has for its first aim preparing pupils to look ahead to the thing they will do next, it becomes easy to add as our second aim the training of its pupils to choose more wisely what this next work shall be.

The ideal junior high school is therefore a finding and a sorting school where pupils may, through actual experience, be led to make a more rational selection of their senior high school work, or their occupation in the world of industry, than would be otherwise possible. The claims for recognition of such a school, could it be brought into existence, needs no further defense.

The third situation in the education of American adolescents that demands correction arises from the treatment that most of our elementary graduates receive on first entering high school. The pupil whose attention has been held for years to repetition and review, who has been helped, prodded, cajoled and threatened into memorizing certain bits of information — not infrequently requiring two years to do the work of one — this pupil now enters high school where he is expected to attack new work largely on his own initiative and impelled, not so much by interest, as by a sense of duty.

For years superintendents and principals have endeav-

ored by all good means to make the entering high school year a more simple and natural introduction to further secondary education. It must be admitted that no stable and certainly no permanent success has attended their efforts no matter how earnest they may have been. For generations the high school has been the school for the selection of leaders, and it has not failed in its task. As a first requisite in training leaders it was necessary to find out who the leaders were and this could easily be done by casting out those who failed to meet the quite altered requirements of the higher school. From his very entering day the high school pupil has been placed on the defensive to prove his fitness to stay in school. Those who were unable or unwilling to defend themselves by a good school record were easily disposed of; no law forbidding, they were at once shown the way out and advised "to go to work." One does not have to go back to ancient history to find a high school teacher boasting of the thoroughness of his instruction in which scarcely more than half of his pupils could reach the passing grade.

It is true that the past ten years or so, have marked a decided change in the purposes for which the American public maintains its secondary schools, but it is equally true that the established habits of over a century have not yet been modified in a majority of our high schools of today. Though the public maintains its secondary high schools as a people's college where elementary pupils may go, not to be made leaders, but to be made more useful to themselves and to the community, still there are enough principals and teachers of the generation that is passing to keep the high schools at work upon a duty that has passed.

In a majority of our high schools of today as in a majority of high schools since they first existed the pupil

is supposed to study at home alone the work he will be expected to recite in class tomorrow. To be sure there may be a modicum of explanation by the teacher, of the work so assigned. The task itself may not be over difficult, but the point of view is wholly different. In the elementary school the pupil knew that he shared with his teacher the obligations of his daily work. If it was his duty to learn, it was equally the teacher's duty to see that he learned. The question of study was secondary to the question of learning. If in the seventh and eighth years the pupil would not study, then the teacher failing in all else, was obliged to study for the pupil and to feed him his mental pabulum in pre-digested form.

As the emphasis in the elementary school lies almost wholly upon getting the facts, but scarcely at all upon the manner of their getting, so in the high school the emphasis still lies upon the facts, but here the manner of their getting, namely by the pupil alone at home, is given at least equal importance through the emphasis laid upon the daily home-prepared recitation.

It may be well enough to say that the elementary pupils should be taught how to study, before they are allowed to graduate, but what principal or superintendent ever set a "graduation examination" based on this ability?

So long as the elementary school attitude remains, as it has for generations: "Make the pupils get the facts and no embarrassing questions will be asked as to how they get them," just so long will the ambitious, energetic and resourceful teacher truly *carry* her class, if that be necessary, across the passing mark for "graduation." However, once across the line and entered in a high school the pupil is set tasks with no attempt to cajole him to his work. Indeed but little if

any effort is made to prove to him that the work itself is really worth his while. Even the most conscientious among high school teachers may feel that it is below his dignity to defend the usefulness of his specialty to a little ignoramus of fourteen years. More often we find the attitude of the high school teacher one of condescending pity. "You poor simpleton," he seems to say to his backward pupil, "if you don't know enough to study my subject, you are beneath my notice. Fail and leave school, as you deserve."

This is no great exaggeration of the situation as we find it in most, if not all, of our public school systems of today. We shall consider this again under General Method, but for the present we have but to agree that some remedy should be found for the sake of our pupils who suffer so inevitably as things now stand.

For a third time we meet the question of whether it is more reasonable and more economical to remodel the schools we have or to secure the ends we seek by establishing a new type of school that includes the three years that most need alteration — the closing elementary and the beginning secondary school years. If we decide, as seems inevitable, that a new type of school seems the more rational solution, since it gives the greater promise of success, then a third reason for the establishment of junior high schools is secured.

Whether the mass of our junior high school pupils go to senior high school or work out their own salvation "on the job" they will still be better able to help themselves to an advance in knowledge, than would have been possible had they been trained only in the older types of schools.

The junior high school with eyes looking forward, helping its pupils to find themselves, trains them to rely

more and more on themselves in acquiring new knowledge.

The three aims that we have considered are unquestionably worthy, but still incomplete. In our discussion of the course of study we may add another aim that may strengthen our belief in those we have just now worked out.

1. What are some of the less worthy motives that have led to the founding of the junior high schools?
2. What are some of the major faults of the later years in the old time elementary school?
3. What tremendous freedom of election has been allowed all elementary school pupils on graduation? How were these pupils fitted to use this freedom?
4. What are some of the more conspicuous faults of the first year's work in a four year high school?
5. What training is necessary to make a wise choice of electives possible?
6. What does the junior high school propose to attempt in this situation?
7. What arguments can you give for establishing junior high schools (rather than attempting to remodel our established elementary and high schools) based upon these possible changes:
 - (a) A revised course of study?
 - (b) A preparation for later freedom of election?
 - (c) A progressive training in self reliance?

CHAPTER II

THE USE OF PROGNOSTIC TESTS IN THE JUNIOR HIGH SCHOOL ADMINISTRATION

ONLY recently has the general public manifested any interest or any faith in the tests which psychologists had long been building up to determine in advance the native ability of those attempting to undertake certain lines of work.

However tardy may have been the public's recognition of the work of our psychologists their testing our soldiers and sailors in the World War has now given mental tests such a degree of prominence that no one with a passing knowledge of current events is ignorant of their established value.

While we have yet some unbelievers to convince, no one in actual contact with either the tests or the tested has failed to register a high degree of approval. From being considered by some at first the vaporings of disordered minds, the army tests came to be recognized by the most cynical as forecasts of the future too near the truth to be disregarded without undeniable loss.

It is a well known fact that the candidates for officers' training schools justified with hardly a single exception the probabilities as worked out by these tests. Of every hundred candidates for the officers' training schools in graded by intelligence tests into five mentally equal groups from the brightest to those least bright, those in the brightest group had no failures. Those in the

lowest group all failed. In the intermediate groups there was that intermediate degree of success that their position in the group on the psychologists' scale would forecast.

In several important particulars these army tests differed from those that had been previously given in the schools. So also those tests that are now being widely used in our schools differ somewhat from those that were recently used in the army, yet in the main all these tests agree in the use of a series of puzzles or short problems that appear to be wholly unrelated to the work for which the forecast is desired.

We have had intelligence tests in the school for many years, but these tests have been used mainly, if not wholly, to determine the subnormal and the defectives. The Binet-Simon tests variously revised and adapted have stood out as perhaps the most widely and most successfully used for this purpose.

To give properly these tests first required a skilled and carefully trained psychologist. Each child tested required a quiet room alone save for the examiner, who gave one pupil his entire attention. A careful test might take hours and even then leave the results in doubt. There was no possibility of a thorough review of the findings of any test except by repeated re-examinations by other experts. Indeed in the earliest tests, each single examiner had but slight possibility of being able to detect or to make allowance for his own personal idiosyncrasies in conducting his examination of the child.

For the army use it was quite evident that the former school tests must be greatly modified in order to be at all practical.

In the first place there were but very few examiners who could be trusted or trained to give a mental test of the type that required skilled preparation and personal

attention. In the second place there were tens of thousands who must be tested almost at once. The idea of individual tests as formerly conducted was wholly out of the question. It became necessary for the psychologists to develop so called battery tests which could be given to several hundred candidates at one and the same time, under nearly uniform conditions, by men who were not psychologists and who had but an extremely short time to acquire such training as might be given.

Furthermore these tests had to be given to men, many of whom could neither read nor write the English language, and indeed to some that could not read or write any language at all. The tests further were to be designed to forecast that indefinite something known as *military availability* so that the men might be immediately placed as soldiers or sailors in those positions where they would be of greatest value to their country in the great conflict. Consequently the tests had to be among other things so designed as to be capable of quick correction and evaluation.

Inasmuch as no one was able accurately and exactly to describe *military availability* our psychologists had indeed a doubly difficult task set before them. The wonderful degree of success that attended their efforts cannot but thrill us all, not only with admiration, but with a pardonable feeling of patriotic pride that our American psychologists were able to work out a satisfactory solution of such an indescribably difficult problem.

The result of the patriotic labors of our American psychologists was first to assist mightily in bringing success to our efforts to win the war, but the second result seems to be of almost equal value and permanence. The tests designed for our soldiers and sailors, when modified to meet the present conditions, seem to be capable — in-

deed have proved capable — of use in forecasting instead of military availability the thing we teachers are so interested in — the probable *school success* of our boys and girls.

However, it must be kept in mind that while these tests may have a more or less general application to all lines of human endeavor, the most trustworthy forecasts will come from specialized tests. Such tests have been and are being worked out to forecast the ability of individuals to enter upon certain definite lines of work. We may have one series of tests for men who are planning to become translators and quite another series for those who are planning to become civil engineers. No single series is capable of giving forecasts of a very high degree of probability for all occupations, and yet it seems possible to determine to a remarkable degree of certainty what we may call for want of a better name *general native ability*. We seem to be able to discover by these mental tests what we might call the basic mental alertness of those who are examined. A reasonable degree of this basic alertness or general native ability seems necessary for success in ANY line of work. If we can add to the results of our tests in *general ability* tests in *special ability* we can secure forecasts of really wonderful prognostic value. These are the tests that are now being worked out in all the leading psychological laboratories of our American colleges.

Though our special tests are still but partially developed, we have now several tests of general ability that are of tremendous value in forecasting school success, which seems to require among other things this general native ability which we have just discussed.

The great value of these tests in school work will later be considered; just now it is worth while to note the

ease with which we may secure prognostications of undoubted value.

It is possible as a result of the work of our American psychologists in the World War to test at one and the same time as many pupils as can be seated in any school building with reasonable precaution against disturbances and intercommunications of any kind. It is possible for any intelligent teacher to conduct these tests after less than an hour of preparation and with no previous psychological training. Finally it is possible to correct and tabulate the results of these tests without special training and with a remarkably small expenditure of time and energy.

From the tabulated results of such a group test, it is possible for the faculty of any school, before their entering pupils have been divided into classes or have prepared even a single recitation, to determine with a high degree of probability the future success or failure of every pupil in the entering class.

However, we must not let our enthusiasm for these tests lead us to forget that all the tests yet published are still in the formative period and are approximate rather than definite forecasts of school success. We are most safe when we apply the results of our tests to groups rather than to individuals. We must not go so far as to say that Smith, whose results are five per cent lower than Brown's, will prove a less able student. We cannot as yet make sharp and definite divisions between individuals though we can unfailingly do so between groups. It is quite possible if we arrange our pupils according to their rating into five consecutive groups from the highest to the lowest, to say with no fear of having our statement later disproved, that a boy in the highest group has, for example, ten times or so the chance of

success that a boy has if in the lowest group, or twice the chances of success of that boy whose test places him in the middle group. Indeed for the purposes of our school work it is not necessary for us to know so definitely the comparative value of the ratings of any two isolated pupils. The greatest value of our psychological tests is the ability it gives us to group our pupils into classes of approximately equal ability where it is possible for the instructor to be absolutely sure that whatever is within the comprehension of the middle group of the pupils of his class will be within the reach of all.

The economy of teaching effort secured by such a grouping is remarkable. The progress of such a group is regular and constant. The speed with which new work may be taken up or old work reviewed is the same for any group of equal psychological rank. Under ideal conditions where the body of entering pupils is sufficiently large it is possible to have a class of forty pupils that is almost as one individual for the work of instruction.

Where the pupils tested are few it may be necessary to seat in one class pupils of widely different native ability; no homogeneous grouping may be possible. Yet even there the teacher is able to distinguish more surely than by class results between those who fail from laziness and those who fail from simple lack of "brains" — and equally between those who succeed without effort and those who gain success only by the hardest kind of work. Castigations and commendations will be more nearly meted out on a basis of truth and justice in a previously tested class than can be possible under any other plan no matter how able may be the teacher in charge.

For the junior high school more than for any other educational institution the mental tests of today are of genuine practical value. We have pupils who have fin-

ished the sixth grammar grade and who now look forward to a three years' course probably leading them into senior high school work. If we consider this three years' work as outlined in our official course of study, not as the work which we must be occupied with for three years, but as a certain aggregate quantity of work to be covered by each pupil with a certain predetermined degree of success we have a better point of view for our purpose.

Our task is then to take our pupils over a certain amount of work with a certain "passing" degree of accomplishment. For convenience and as a result of experience, trial and error, we have found that, on the whole, three years seems a reasonable amount of time to grant our "average" pupil in which to do this work.

However, if now with the results of our mental tests in hand we find many pupils who show promise of being able to do the work in two years, why then must we compel them to take an added year to do this work simply because others cannot progress as rapidly? On the other hand, if our mental tests discover (as they almost always will do) a group that cannot possibly do the work in the three years, why then must this group be pushed ahead at a rate of speed that will make their future failure inevitable—not of necessity because they cannot do the work—but because they cannot do the work at *the rate of speed* our school conventions require.

We educators have been accused of maintaining in our courses of study procrustean beds upon which our pupils are forced to lie, and in part our critics and accusers have been right. Yet all this has been because we have endeavored to give our "average pupil" the consideration which we believed was his due in the matter of time allowance. Because we have had to work with large groups of un-

certain mental adaptability and because until very, very recently we have been unable to forecast the time element in education with any trustworthy degree of accuracy, we have—to their undoubted injury for life—chopped off the bright and stretched out the dull so that they might fit the bed of our average time allowance of so many years for so much work.

The change that will come, or has come, begins with our turning our faces toward the work to be done as so much actual subject matter to be studied and covered with whatever degree of accuracy we may decide upon. The trouble has been that in the past we appear to have been regarding the time element as the real essential. Four years of secondary education appear to have been agreed upon as necessary. Having first decided upon the time to be spent in secondary education, it then became necessary to find the subjects to fill the time so assigned.

With the improvement of our mental tests, good as they are at present, we may hope to find the primary emphasis placed upon *the work itself* and only secondary importance attached to time. After all if the work is well done, as established by as searching tests as may be necessary, why do we need to concern ourselves so vitally with the element of time? Is it not more vital for educational advancement for us to know that a boy has an accurate and facile acquaintance with "elementary algebra through quadratics" than to know that he has had "a year of algebra."

Part of the reform must come through our colleges, who have in most cases laid down the time requirements for our secondary schools. In the meanwhile it remains for our junior high schools to be real pioneers. We are less hampered at present by tradition, by prescribed

regulations, by domination from any source than are the schools of any other grades below the college.

By considering the work of the junior high school as so much work to be done, whether in one, two, three or four years, we are making an advance that marks an epoch in education.

We are able to take this new point of view only because through perhaps a happy accident the growth of the junior high schools and of the prognostic tests of school success were coincident in point of time.

If our estimation of those mental tests is the correct one the junior high school that does not avail itself of the forecasts now within reach falls far short of its service to the schools of today.

For the benefit of those of our readers who are interested in more details concerning the success of prognostic mental measurements the following pages of this chapter are designed:

Since 1915 the Speyer Experimental Junior High School has been using tests of general native ability for grading all its entering pupils into classes where pupils of approximately equal ability might work together.

The mental tests were given as soon as possible — recently on the first day — after the new pupils were admitted.

Following these tests by some seven or eight weeks these same pupils were given another uniform examination, this time upon the school work they had covered since entering. This final grading, which with occasional exceptions, endured during the pupils' stay at Speyer, was made by combining the results of the two series of tests: — the psychological and those based on school work. No two sets of psychological tests given the entering pupils were the same — new combinations being

used and new tests introduced as each succeeding group entered the school. The work of correcting, weighing and combining the results of these earlier tests was very heavy. One group of one hundred and fifty entering pupils was given no less than thirteen short tests within three days. To evaluate the results of these tests required the extra time of three or four teachers for more than two weeks. Recently Speyer School has been using modified forms of the Army Intelligence Test — booklets of five or six short tests for which the pupils were given a little over an hour in all. The results of these tests were scored and tabulated by two teachers in one evening's work. The classifications made as a result of the shorter tests have not been on the whole as exact as those of some of the longer ones, but the saving in time and energy seems to warrant the change.

In the opinion of those who studied the classification and grading of the pupils at Speyer the tests of native mental ability were, on the whole, not measures but rather approximations of school success.

We came to believe that other factors not measured as yet were of great importance, for example, industry, system and regularity in home study and a serious purpose in work are factors of almost as great importance as actual native ability. Taking an illustration from the financial world we came to believe that each pupil's native ability represented his inherited fortune — large or small as the case might be. The returns on this inherited money when reinvested by the pupil in school success varied as the pupil who invested this inheritance did so wisely or foolishly. The wise (persevering and industrious) pupil made such an investment as to give him a high rate of interest and a large yearly return in school success. The foolish (lazy and inattentive) pupil, though

possibly with a larger inherited capital, through a poor investment of it secured a lower annual return than others with less inheritance. In a word the boy's hereditary ability was his principal, his industry was his rate per cent and his school success was his annual interest.

However, more recently we have come to believe that certain combinations of mental tests will measure both ability and industry at one and the same time.

Our conversion to this point of view came as the result of a series of tests given by Leo H. King, at the time a graduate student at Teachers College, Columbia University. King took entire charge of testing the mentality of the 275 pupils that entered Speyer Experimental Junior High School in February 1919, he not only gave the tests but corrected and tabulated the results.

On the basis of the measurements given us by King we divided the entering class pupils into a sequence of eight classes of approximately thirty-four pupils each. Taking the first thirty-four from the list of pupils arranged in order of their success in these tests, we formed them into one class, the next thirty-four into the second class and so on until the eighth class was made up of those who stood at the bottom of the list.

Seven weeks later we gave the same pupils a series of uniform examinations upon the school work they had covered since entering. As a result of our school tests we changed the classification of some twenty-five of our 275 entering pupils, placing each pupil, whose general ratings in our subject-matter examination indicated the necessity of a change, with that class whose median rating in our examination was most nearly like his own.

After some twenty weeks of school work (actually in November 1919) we gave another uniform set of school examinations to determine the relative progress of the

eight classes of this same group. Again about twenty-five pupils showed by their general ratings that a change in class was necessary and while these changes were under discussion the earlier ratings given us by King were reviewed. Imagine our surprise to find that each pupil whose latest record called for a change in class showed that he should be returned to the very class in which he was first placed by our earlier mental measurements and from which we had him taken twenty school weeks before.

This experience shattered our belief in the necessity of holding to the "principal and interest theory" which we had come to support. We believe that while *all* standard psychological tests do not measure both ability and industry, certain combinations have done and will do this. At the present writing, sixty school weeks later, we have found no reason for changing any of these pupils from their original class groups.

The chief contribution made by King was the peculiar combination of tests designed to detect different abilities. There were nineteen different tests in all that were used and these were grouped into six different series. The particular contribution that will be made in the future will consist in the manner in which the tests are set up. This particular series included both verbal and non-verbal tests, in all the various forms which have been used by Otis, Thorndike, Terman and others.

These were the tests used:

NON-VERBAL

SERIES I

- 1 Figure series completion
- 2 Figure cutting
- 3 Figure association
- 4 Picture analogy

SERIES II

- 5 Picture completion
- 6 Picture analogy
- 7 Object association
- 8 Fundamental arithmetical processes

VERBAL

SERIES III

- 9 Easy directions
- 10 Arithmetic
- 11 Reasoning
- 12 Word analogy
- 13 Opposites
- 14 Number interpretation
- 15 Number perception
- 16 Information
- 17 Briggs analogy
- 18. Kelley-Trabue completion
- 19 Thorndike reading

As a result of these tests just discussed the teachers of Speyer School now believe that it is possible to make a classification of pupils on their entering week that under normal conditions should endure throughout their course. Granted that pupils of lower ability may spurt ahead and pupils of higher ability may drop behind, it is still for neither type their natural gait. The less able pupil who advances himself by extraordinary effort finds that he is unable to keep up the strained pace set by his more able fellows and sooner or later drops back to his natural group. Similarly, the bright pupil who falls behind finds his lower class progress slow, dull and uninteresting and soon takes up his natural gait and rejoins his original group.

Of course all our prognostications are based on the pre-supposition "other things being equal." It is not to be supposed that the bright pupil who is employed in

a store many hours each day can furnish the quality of school work that his mental measurements would show to be his natural product. Nor is it to be supposed that the slower pupil whose parents exact an excessive amount of school preparation will fail to rise slightly above his fellows of equal ability who have no such restrictions. For the teacher it is enough to know that if a pupil of superior ability as shown by the mental tests fails to deliver that quality of work which these tests forecast, that there is some cause to be sought outside the class room. Knowing that there must be a cause gives faith to persevere until the cause is found. Having found the cause the teacher is in a position to apply the remedy if one exists. From every standpoint then the results of standard prognostic tests are valuable to the teacher even more than to the administrator.

While few schools can command the services of experts, the results of the tests just described give us reason to hope that there may be evolved in the not far distant future a series of tests easy to conduct, and easy also to correct and tabulate, which may give a remarkably accurate forecast of any child's chances of school success.

In the meanwhile it appears to be the duty of all junior high schools to use such tests as we now have so that we do not lose the ninety per cent accuracy now available while we are waiting for perfection.

NOTE: The Bureau of Publications, Teachers College, N. Y., and the World Book Co., Yonkers, N. Y., will supply at moderate cost tests, *with the hand-book that tells exactly how the tests must be given*, to those not already supplied with this information.

1. When and why were the group tests of general intelligence first widely employed?

2. What tests of general intelligence had been previously published and why could not these earlier tests be generally employed?
3. What do our newer psychological tests for school use attempt to measure?
4. What discrimination must we avoid making from the results of our group tests of school success?
5. What gain may I expect if I am given a group of homogeneous ability to teach?
6. What earlier assumption concerning the findings of general intelligence tests seems to have been disproved at Speyer School?
7. What is the line of improvement that must be followed in making up newer and better tests of school success?
8. What do I need to know in order to give these tests myself?

CHAPTER III

SPEED GROUPING IN THE JUNIOR HIGH SCHOOL

THOUGH it has long been recognized that all pupils do not acquire, or assimilate in school, new subject-matter or new processes at the same rate of speed, nevertheless, the country over, little definite progress has been made in working out a definite plan, capable of general application, which would make promotions adaptable to the pupils' native or hereditary rate of speed in learning.

Pupils have long been grouped in classes of thirty or more where an official printed outline or syllabus of work determined in advance the amount of school work that each class should attempt to cover in a semester or in a longer definite period of time.

Nevertheless, in each normal or average class have been found pupils whose natural or inherited ability would enable them to progress at twice the rate of learning proposed for the class. Similarly, there have been found pupils whose rate of learning is so slow that they could never hope to learn in even double the prescribed time the officially designated facts or processes, required to pass" in the work of their grade.

Between these two extremes is a middle group that, on the whole, finds the time allowance for the work planned fairly satisfactory for their inherited abilities, but this middle group in every class is by no means sharply defined. From the pupils that learn most rap-

idly to those that learn most slowly there is usually a gradual falling off in the rate of learning that is scarcely perceptible when we measure the differences between two contiguous pupils in such a sequence.

The loss sustained by pupils in the usual school class is not always fully appreciated. We have been in the habit of assuming that pupils, who naturally learn more quickly than the average of their class, suffer nothing more serious than the theoretical loss of time spent in doing more slowly with the class, the things that they could do more quickly if not held back to keep step with the group.

However, this loss is by far the smaller one in my estimation, when compared with certain habits of laziness that these brighter pupils are actually being taught in their progress through the school grades.

Pupils who learn the new work, appreciate the new processes, assimilate the new facts well in advance of their classmates, are both a delight and a nuisance to their teacher. They are a delight in that they may be early checked off by the teacher as needing no further attention, on her part, in the lesson at hand. They are a nuisance in so far as they insist upon volunteering information which the teacher is laboriously endeavoring to develop from the mental processes of the slower pupils of the class. As a result, the brighter pupils suffer a very decided repression in the class room which dulls their eagerness to work by lessening their desire to make self active contributions.

The skilled teacher who is striving earnestly to keep her class together and to secure a high percentage of promotions at the end of the year knows that she will obtain the best results for her group as a whole, if she devotes ninety per cent of her energies toward instructing

that small group that is stationed just on the danger line of failure. The ten or fifteen per cent that is "hopeless" she wisely does not attempt to lead in an effort that is inevitably foredoomed to failure. The brightest pupils, on the other hand, "will take care of themselves." If the teacher but aims to fit her instruction to the intelligence of the moderately slow, the danger line group, she will surely include the intelligence of all of average or higher ability. Therefore the teacher of experience learns to concentrate her energies on the minds of those pupils who are below, but not hopelessly below, the average intelligence of her class. Years of teaching have shown her that such a plan brings the greatest good to the greatest number—if percentages of pupils promoted is a measure of that good.

However, in very recent years, indeed chiefly with the past year, there has come a better appreciation of the loss the brighter, or quicker, pupils suffer from the treatment they receive even in the average class described.

In the first place these quicker learning pupils are denied that training in effort which is necessary not only to the fullest development of their minds, but equally to the highest development of their moral characters. To gain promotion from grade to grade it is only necessary for the quicker pupils to be reasonably attentive, or perhaps only sporadically attentive, to the instruction others are receiving, if only at the same time they be reasonably polite, quiet and inactive while the slower ones are receiving the teacher's earnest efforts.

A very careful analysis of the requirements laid upon the more capable students in each average class will force us to realize that these pupils are actually being forced to acquire HABITS OF LAZINESS in order to adapt themselves to their customary school surroundings.

This discovery, if such it may be called, was forced upon me in my position as supervisor of some classes composed almost entirely of boys of very unusual mental ability in Speyer Experimental Junior High School. From some twenty neighboring schools there are promoted semi-annually to Speyer the pupils ranking in the upper quarter of the sixth year grades just completed. Among these pupils so promoted are some who, by psychological tests, possess intellects very far above the average to be found in the usual public school classes — class leaders in the various schools from which they come.

It would be but fair to assume that if we could form a class composed of class leaders, school work of a quality and quantity heretofore impossible could be at once secured.

The surprise and disappointment that is bound (it would seem almost inevitably) to follow from a study of the actual work of such a class is more than startling. Though we are assured by their previous school records that these pupils have been class leaders, though the psychological tests show them to have remarkable native ability, or general intelligence — still we find their progress halting and scarcely better than "average" for a while at least.

It is both amusing and disheartening to witness the first lessons in such a newly assembled class. No one seems over anxious to learn. There is little or no competition or rivalry for leadership. Most decidedly there is no conscious EFFORT put forth by any appreciable fraction of the class. The whole attitude of such a class might be summed up as "watchful waiting" — waiting for the teacher to struggle with the class dullards and so to give them, the brighter, a chance to absorb the new work without effort. There being no dullards, this class of class

leaders often merely slumps into mediocrity for an appreciable period and is frequently surpassed for the first years work by a group of children of far less ability.

But there is further evidence to support the belief that pupils of unusual mental ability, sufficiently docile, are being taught habits of laziness. This evidence comes from the extremely accurate and complete records kept for the pupils of a large privately endowed parental school where selected children of a school age are housed and cared for as only in the more fortunate homes. The head of this institution has applied individual psychological tests to his wards ever since the tests have reached a reasonable degree of trustworthiness, for some five years back at least. Records are also kept of each pupil's monthly success in school work and when these pupils leave school a very careful follow-up system keeps track of their success in industry or business.

The interesting and pertinent fact is that the records to date show that the highest degree of success in employment is secured by those pupils who are measured as of average, or normal ability. The pupils who were rated as decidedly above the average seem so far to fare no better than those markedly below the average when they are thrown upon their own resources.

The possible explanations for such a situation are countless, but seen from the angle of the mental habits acquired by these pupils in school I venture to insist that one cause of this slump in progress is the training in habits of laziness, which these quicker pupils have unconsciously been receiving during their eight or more years in the class room. All unconsciously to themselves, to their teachers, or to their guardians, these quicker learning children have been trained in ways of easy knowledge and when in employment it seems but fair

to assume that easy jobs and easy money would be their natural and first consideration.

Here, then, is a situation which, even if it be not as black as I have painted it, is still so serious in its possibilities for harm as to demand the attention of the best minds that are at work on our present-day school problems. Are we not conducting our public schools today in a way which may make those children who should contribute the most to our nation's mental, spiritual and material progress the least able to make their rightful contribution?

Having considered the harm that may easily come—does usually come—to those who naturally are able to progress in school at a much more rapid rate than the average of a normal class, let us now consider those who find the progress of their class always just a little too fast for their slower powers of acquisition. In this class I do not place the mentally defective, at least two in every two hundred of our school population, but those who can, and in many cases do, "pass" from grade to grade in school, always just by a hair's breadth managing to escape the official line marked "failure." These pupils, though regarded as "promotions," are still recognized and often labelled as dullards. Their limping intellects seem never able to progress without the teacher's help. Sometimes they seem to be patient, plodding, oxen-like creatures who are willing to do their best while knowing that even their best is not really very good. Sometimes they are rebellious, sulky, antagonistic boys and girls who cause their teacher many weary days and sleepless nights—stealing from their classmates each day the attention and the energy of the teacher, who feels she must give all her time to instruction and none to discipline if her class is to cover the work of its grade.

From class to class these slow-learning pupils may be passed onward and upward, always more or less deficient in the work of the grade they are leaving, always more or less unable to undertake the work of the grade just ahead. If seventy per cent is the passing mark, these slower-learning pupils may be credited with never knowing more than two of every three facts or processes the teacher has attempted to teach them.

If they can add a column of figures correctly two times in three, they have reached $66 + \%$, almost enough for promotion. If they write with a reasonable degree of correctness twice in three trials, they may hope for a passing mark. If they get two thirds of the facts in their geography lesson or fail in but one third of their explanations of historical events, they "pass," but nowhere if promoted regularly do they ever gain an appreciation of thoroughness in their school work.

Let us frankly admit that for a considerable fraction of our class — the submerged third, let us say — there is being given a training in habits of half-doing, or of failure that cannot fail to work harm when these pupils are sooner or later thrown on their own resources.

Many of these pupils are practically never given an opportunity to do their work in any subject, because the pace set for the average, or normal, child is always too fast for them to stay long enough on any one topic or process to get it thoroughly in mind.

To be sure, if these slow-learning pupils should be so slow as to lose promotion at the end of any school term, they may repeat the work of their grade and may learn some of their work more thoroughly. However, in this very repetition there is the stigma of previous failure attached to the slow pupil. It would almost seem that *for some pupils in every school grade their only hope of*

thoroughness lies in failure — an anomaly — but an indictment of our usual school organization to cause us no small alarm.

In considering these slower learning pupils' progress in school, I have often considered the similarity of their case to my own when as a passenger in a rapidly moving railroad train or automobile, I have been whirled past some huge advertising sign or public notice that I really wanted to read, but of which I could at best get but a few words, and miss the rest. If I am taken over the same road again and at the same rate of speed, my memory helping me, I get a little more of the message, and finally, if I make the trip enough times, I get it all — a thorough understanding of the thought expressed. However, had I passed that way but once, at a rate of speed suited to my individual quickness or slowness of apprehension, I would have grasped the entire message at the very first reading. The simile would be complete if I had beside me as a super-passenger one who, either by begging or by threatening, was urging me to read the sign faster than my mental capacity would possibly permit. Something tells me that if such a situation existed for me, I should empty upon my tormentor all the vials of my wrath, rather than quickly to admit total failure and incapacity.

How many times in school work is it assumed that "pressure while repeating the grade" is the one cure for previous failure — and often requiring on this repetition *the same rate of mental speed* as on the pupil's earlier, unsuccessful attempt to understand the topics taught.

If the quicker pupils in the ordinary class are taught habits of mental laziness, the slower pupils are taught habits of failure — habits of failing to get anything thoroughly, habits of being content with a 60% or 70%

achievement, habits of loss of self-respect, habits of saying "What's the use—I can't do it well—why make the effort?"

Even the average, or normal, pupil cannot escape the harmful example of observing the pupils, both above and below him, being trained in bad habits. These average pupils see their brighter classmates gaining promotion without effort and their slower classmates gaining promotion with but little achievement. It is small wonder that we find in many pupils of the middle group, a desire to imitate both extremes by aiming to use the least effort necessary to get the minimum required achievement.

The answer and remedy lies first in homogeneous grouping of our pupils as the result of carefully given tests of general intelligence, combined with, or influenced by, the pupils' previous school record. But if there is disagreement in the forecast, the classification should be swayed more by the psychological than by the scholastic tests, for the latter shows only what he has done, the former shows what he should have done.

To the degree that in a single school, or in a group of neighboring schools there is a large enrollment of pupils in any one grade, to that degree is homogeneous grouping possible and useful.

We have previously discussed the value of homogeneous grouping from the standpoint of what it makes possible in positive lines of work—we now see its possibilities in the matter of prevention of waste—waste in bad habits taught in school—waste in the taxpayers' annual contributions to school support, for the salaries of teachers, for the material equipment and housing necessary for those pupils who have been forced to progress at an unnatural rate of speed in their school work.

To be sure not all school communities have enough pupils enrolled in any one grade or school year to make this kind of homogeneous speed-grouping a simple matter. However, in most towns or villages, there are enough pupils promoted into the work of the seventh school year to make it worth while to assemble them under one roof and under one supervisor so that they may be classified into groups which more nearly approximate a grouping of abilities.

I have never seen a group so large that its size did not greatly improve the possible homogeneous grouping, but with even three classes in a grade at least something can be done. Five classes of thirty-five children each can give very satisfactory results I know from actual experience, but far inferior to what I should hope to secure from twice that number similarly graded into ten classes.

Call our assembled seventh year pupils a junior high school if you will, but make the seventh year classification on the basis of assembling the largest possible number of pupils of the seventh year under one roof. Rather than to have two junior high schools with parallel vertical courses in different parts of a small city, I would make the division a horizontal one and give each school all the pupils in one grade. The hardships of a longer walk to school, or even of a cold lunch in winter, are not so great as the hardships of habits of laziness or of failure that may be unavoidable for many in the smaller school nearer home.

In securing homogeneous grouping we have, after all, but made some preparation to attack our problem. The main point of issue is beyond. THE RATE OF LEARNING in each smaller homogeneous group is different from that of every other group in the series. Each class has

a rate of speed — a maximum rate — laid down for it by nature and nature's laws — the laws of heredity or hereditary capacity are subject to little change under ordinary conditions of health and industry.

We are now ready for our new course of study, or curriculum, which will FIT THE RATE OF LEARNING to the natural ability of each group. Each group has its own work cut out for it, a different amount of work for each group, based on a summary of the genuine essentials to be covered. No such series of courses (within a grade) can be laid out in advance — each must be worked out in practice by the classroom teachers, but the rules for working out the courses may be understood in advance.

If before we have called our passing mark 70%, let us advance it not less than twenty points if our original group be large enough to permit a genuine regrouping of pupils by their abilities as shown in psychological tests.

Each group will then progress at its own normal rate of speed, some groups doing in one year the work that it will take other groups two years or more to cover with the same degree of thoroughness.

All groups are alike in effort, alike in industry, alike in thoroughness, but in achievement each group is as different from the others as the capacity of its members is different from the capacity of those in another group.

While school statistics may necessitate an annual promotion day, in reality each day is a promotion day for the members of such a group. There is no repeating a grade; pupils are never "left back," or "held over," save in cases of absence or ill health. There is always an approximation of 100% promotion within a group. Pupils

whose mental awakening takes them into a higher speed-group are transferred at any time without holding them for a promotion day. While other pupils, whose loss of energy from ill health lessens their school effort, may for a time be placed in a more slowly moving group.

However, as a matter of school bookkeeping it may occasionally become necessary to subject all the pupils of such a homogeneously subdivided grade to a uniform examination, by which the relative progress of each of the various sub-groups may be placed more or less definitely upon a scale which measures for each group its rate of progress in the total work of its official grade. The preparation of such a uniform test is itself a matter of serious study.

In the first place, we need a long test, not necessarily in point of time, though that is to be considered — but especially a long test in the range of subject-matter covered. All the questions must be equal in difficulty, so far as skill can accomplish this, and the questions should always be arranged in the order which the various class teachers have uniformly pursued while teaching their classes. The first questions are then based upon the first topics, studied alike by all pupils of the grade — the questions following next are based upon the work which follows next. In brief, the examination is a written review, step by step, in sequence of the essentials of all the work covered by the most rapidly moving group — with something added from the work ahead which no group has yet attempted.

For the first few tests in any grade no passing marks can be established — nor is there any need of any.

If we may suppose each group to be equally well taught we will find on studying the examination ratings that the groups are distributed with medians or aver-

ages ranging from 25% for the lowest, to perhaps 75% or even higher, for the quickest moving group. The interpretation of the results of these examinations then becomes a study in itself.

If our examination paper has been most carefully prepared, criticised and revised by all the teachers of the grade, we can count our results as more or less accurate measures of the speed of learning of each group and, to a decidedly lesser extent, of each pupil within the group. If the slowest group averages 25%, and the quickest group averages 75%, we can say that roughly speaking, the higher group at 75% is able to learn three times as fast as the lower group at 25% and plan our advance work accordingly. To the pupils it must be fully and repeatedly explained that one's rate of learning, other things being equal, is not a measure of ultimate success, but rather a matter of hereditary endowment—that the use which one makes of the knowledge he acquires in school, whether he gains that knowledge quickly or slowly, is the real measure of a pupil's future promise.

The pupils in the slowest moving groups who maintain themselves at, or above, the median, or middle mark, of their group, must be recognized as being just as worthy of commendation and of school awards as are similarly placed pupils in the most rapidly progressing unit.

For such a uniform test there is, then, no one "passing mark," but a series of such marks—a different one for each case. Whereas, in such a test, 50% might indicate failure if unsurpassed by the pupils in one group, this same 50% might be a rating indicating the highest success if reached in the same test by pupils from a more slowly moving group.

However, these "uniform grade tests" may best come infrequently—not more than twice a semester at most

— after the organization of the grade is once completed. Late November, late March, or early April and the close of the school year have been found to be good dates for testing relative progress in achievement. Doubtless there are other better dates to be found by experiment.

The point is that too frequent taking stock of relative progress is often not only a waste of time, but may serve to discourage some pupils by the inevitable contrasts between the extremes of ratings secured. Within each group, the weekly or monthly review tests are similar to each other in difficulty, but far different in the subject-matter they cover. If 80% or 90% be set up as a provisional passing mark, for each individual group, then each pupil in the group of like-minded pupils must reach that mark at least, to continue with his present classmates. Any pupil's individual progress and promotion then, within his group depends upon that pupil's tested ability to keep up with his own classmates in their daily, weekly and monthly progress — a progress which it is arranged in advance shall be within his possibilities, however fast or slow that progress be.

While many supervisors will at once agree to the organization of rapidly moving classes within a grade, there will always be some who believe that even the slowest-learning group should *attempt* to cover *all* the work laid down in the official syllabus as a year's work. Nothing is more unfair or destructive of good school influence than to make allowances for the quicker and not for the slower-learning pupils, yet how many school systems are open to this indictment. Fortunately, they carry their own punishment if not their own cure. Not only is the total progress within a grade made lower by this discrimination, with a resultant lower proportion of total promotions, but such a school system is plagued

with ever present problems of discipline which the completely grouped system avoids. Pick out a school where there is a high percentage of unruly pupils, cases of insubordination, disrespect and incipient revolution, and you will find a school where there are many pupils being forced to attempt the impossible, and where the pupil who cannot do the work at the rate demanded is attempting to bolster up his self-respect (perhaps unconsciously) by contending that he *will not* do the work assigned — work which the careful student of education discovers that the pupil could never hope to do, even if he were to work with all the mental energy at his command.

Fortunately, more and more superintendents are becoming convinced that if rapid advancement classes are desirable, classes arranged for slow advancement are equally valuable and desirable.

The junior high school, while by no means the only type of school where this grading by speed of learning should be employed, still deserves particular attention as being the type of school where such a plan may most easily be inaugurated. We already have been using the psychological tests to secure homogeneous grouping for better teaching units — pupils whose powers of comprehension are more or less alike being placed in the same class for their own and their teachers' benefit.

The next step then is not a difficult one in such a school — to arrange that our teachers no longer attempt to cover the same amount of yearly work with each homogeneous group, but rather that they attempt to fit their speed of teaching to each group's separate speed of learning to the end that each pupil shall work at a reasonable maximum of his mental possibilities, neither slower, learning habits of laziness, nor faster, learning habits of failure, but at the nearest approximation of

that natural speed which his unchangeable mental endowment has predetermined.

Once adopted as a permanent feature of our forward looking junior high school, we may expect to see "speed-grouping" a feature ultimately of all subsequent high school organization.

At this point some one will surely raise the question as to whether or not special programs are really desirable in junior high school work. Despite all that may be said for advancing the pupil in those subjects in which he is proficient and despite his failure in other subjects, nevertheless the junior high school may prove altogether too early a point for specialization.

If in the higher grades of the high school and in the college we permit the pupil to select the subjects in which he is particularly interested and to avoid taking those subjects in which he has no interest or little aptitude, it is because we recognize that the time has come to permit the pupil to take active steps toward preparing for some special line of service.

In the junior high school, however, we find little justification for any such specialization. To be sure, we have permitted a selection of one of three major lines of work, the academic, or general, the commercial and the technical or industrial. However, when a choice has been made of one line of work we are justified in laying down minimum essentials for promotion in this line. In the academic work, for example, a boy who is unusually good in mathematics and unusually poor in English should be directed to put more time on English and less on algebra until he has secured at least a passing grade in the subject in which he is deficient. All the way through our junior high school the emphasis may well be laid upon keeping what some may call

a level foundation. The boy who shows unusual proficiency in social science with a marked deficiency in mathematics should be taught to realize that his first duty is to make up his deficiency and after that to shine in the subject of his choice if he will. Boys, as rational beings, will appreciate the value of laying a level foundation for future work and they can be shown that it is absurd at their age to strive for distinction in one line of work while failing in another. If this is once brought home to the pupils and (to make an apparently absurd statement) they are made to feel that the measure of their success is not the subject in which they excel, but rather, *the subjects in which they do not fail*, we will have little occasion to discuss special programs or promotion by subjects.

Experience of teachers and supervisors who have made a study of these special programs during the past several years seems to indicate that the boy who seeks promotion by subjects, fails in certain subjects not because he cannot pass in them, but because he does not really care to pass, being assured of promotion in the subjects in which he is most interested.

Our junior high school subjects are not yet so different in difficulty and so highly specialized in appeal that the boy who can pass in one of the subjects cannot pass in the other subjects of the same grade if he really wants to do so. The time to give the individual attention to the pupil's needs therefore is not after he has failed in certain subjects, but before he is permitted to fail.

Seen from this angle, the special program is only an ambulance at the bottom of the cliff attempting to make amends for the injury which earlier neglect made possible. The time for individual attention is the first sign of failure in one subject of the pupil's daily pro-

gram. If we can convince the pupil that he must spend sufficient time on each subject to make his work in that subject satisfactory, we shall be building a fence around the top of the cliff and shall not need the ambulance at the bottom.

It is an open question as to whether or not the promotion of the teacher with the class strengthens the administration of the elementary school. Certainly in the lower grades there is room for argument on either side. However, in the junior high school, where homogeneous speed grouping is employed, every argument seems to indicate that the success of the school depends largely upon having the same teacher keep the same pupils from their time of entrance to their graduation.

We are trying to combine class instruction with individual consideration of pupils' aptitudes. We are trying to find out what the pupil is best fitted to do for his life work. We are trying to strengthen the child in those points of character or of school work where he is weak and, possibly, to keep him from a one-sided development in those lines where he is strong. Even to attempt this work it is necessary that the teacher become more intimately acquainted with the pupils of his class than under other types of school administration. The three years of junior high school is little enough time for the teacher to make this intimate personal acquaintance with the likes, dislikes, capacities and incapacities of the pupils whom he teaches.

Any plan which proposes to change the pupils from one teacher to another in each successive subject is foredoomed to failure in the realization of the junior high school ideal. Even when the teacher keeps the same class and the same pupils from year to year, success is by

no means assured, but a decidedly lower percentage of failure is recorded in those classes where the teacher is given an opportunity to study his pupils during their entire junior high school course.

Under the ideal plan, each successive entering group, after having been mentally tested and assigned to speed groups, will be given a certain number of official teachers — for example, one in English, one in mathematics, one in natural science, one in social science, one in foreign language, and these five teachers at least will remain as the official teachers of this group during its entire stay in the junior high school. Some one has called this the "wave idea," likening the successive entering groups to a succession of incoming waves, the pupils and teachers being promoted together until the pupils are graduated, whereupon the teachers return to the group which is last admitted.

In order to have the ideal plan work out in practice, it will be seen that we shall need an entering group of not less than 125 pupils, or if our classes must be larger, not less than 200, the first number giving five classes of 25 pupils each and the latter plan five classes of 40 pupils each. The point is, we need at least five entering classes to make our plan truly effective. For example, under the ideal plan a teacher of mathematics will meet an incoming group of five or six classes, all in the same grade, but different in ability, and keep these five or six classes under his personal instruction until, by successive promotions, they are graduated from the junior high school.

The importance of this arrangement cannot be overestimated. In the first place, the teacher having all the classes in the grade is best able to regulate their comparative speeds. He is in a position to know how much

faster "division one" is working than "division two" and so on until the slowest moving division is reached. He is in a position to advise the transfer up or down of pupils who are showing marked differences from the average of their particular class. By covering all the work in mathematics from junior high school entrance to graduation, he is in the best position to make that growth a harmonious and effective development with no sharp breaks at promotion times. Moreover, the pupils are not forced to re-adjust themselves to new personalities and new methods of instruction, but can devote themselves to the subject-matter in uninterrupted progression.

In neighborhoods where the entering classes are so small that there is little opportunity of making homogeneous groups large enough to warrant their assignment to an individual teacher there will be extreme difficulty in utilizing this new form of grading.

Only the most expert teacher will be able to divide her one class of thirty or forty pupils into speed groups and then keep each group working at its maximum possibilities.

Wherever it is possible the better plan by far is to combine all the seventh grade pupils of the neighborhood into one large group which may be tested and then subdivided according to abilities. When the housing conditions permit, it is, of course, desirable to have one central junior high school, but where there are only limited accommodations in any one building, one or two alternatives might be employed.

Our plan would be to have the pupils collected and tested at one central school and then to have the several speed groups, so discovered, assigned to various rooms in the buildings that could accommodate them. This would

give in effect one junior high school with its classes seated in various neighboring schools.

Another plan would be to have a succession of schools with five rooms, more or less, that could be utilized, admit all the seventh grade pupils that applied for junior high school admission at any one time. Thus the pupils applying for admission in September could be housed in School A, those admitted in February could be assigned to School B, the following September School C could receive the entrants and so on until School A again had room enough to admit an entering group.

This plan gives a series of junior high schools, scattered through the neighborhood, each a separate entity keeping the same identical pupils from entrance to graduation. In some ways this "wave" school possesses advantages over all other types, even over the one large central junior high school.

Finally, while nearly all the conspicuous benefits of speed grouping depend to a very large extent upon having an entering group so large that pupils may be arranged in definite official classes of nearly identical speed ability, yet the unusually able teacher of a small entering class should not be deterred from attempting some form of speed grouping. Let us admit that this will be a difficult proposition and one in which the poorly equipped teacher can hope for but small success. However, with a skilled instructor, the small class may still be divided into speed groups where the teacher may lay out work for the more able by which they can cover the grade work in advance of their less speedy fellow pupils. Even if four or five gain one year more of school instruction, no small good will have been accomplished, while, on the other hand, those apparent laggards will be kept at work at a speed which suits their capacities and

so escape the stigma of failure and of repeating the school grade, possibly only to fail again the next term.

1. What three groups can I distinguish in my class as regards my pupils' rate of learning?
2. In what bad mental habits is my quicker learning group being trained?
3. What injustice may be done my slower learning group by forcing them to follow an unnatural rate of learning?
4. What remedy can I suggest for the two undesirable situations just considered?
5. Why do we need a *long, carefully graded* test to distinguish our pupils' various rates of learning?
6. How should I plan such a test in my specialty?
7. What effect does speed grouping have upon school discipline?
8. What bearing has speed grouping upon promotion by subjects?
9. What are the peculiar advantages in a junior high school of promoting the teacher with the class?
10. How may some of the difficulties of speed grouping in a small school system be overcome?

CHAPTER IV

CHOOSING THE COURSE OF STUDY

At the very outset some one may claim that whatever may be our theoretical choice, in reality we have little or no actual freedom in selecting our objects of study. Tradition and authority have laid down the rules as to what shall be studied in each succeeding school year.

To this contention there is but one answer: if tradition and authority combine to forbid any change, by that very restriction a junior high school is made impossible. The very initiation of a junior high school implies freedom to make such changes in the course of study as may be necessary in order to carry out the junior high school idea.

Even with such reasonable freedom as may be granted by a liberal and progressive superintendent of schools and board of education, we still shall experience grave difficulties in selecting work that will meet our requirements because of the apparently unavoidable conflict between the demands of current school work and those of the world outside the school.

In the school world it is more important that a pupil know the principles of combustion and expansion of gases than that he be able to drive an automobile, but in the world of grown men the man who can run the car is the one on whom we prefer to rely. To be sure the best operator is the one who knows the theoretical as well as the practical operation of his machine, but the schools are too often charged with indifference to the *practice* if the theory be to some degree appreciated.

Indeed, if a man purchase an automobile, as many hundreds of thousands have recently done, he often finds it harder to gain a knowledge of the practice than of the theory of how his car runs. This experience, with countless others taken at random from every human occupation, gives strength to the common belief that the knowledge given in school is of an inferior type to that acquired "on the job."

To be sure it must be admitted that a select few, the super-engineers, designers and inventors, must know the theory to the highest possible degree, but for the man in the street such knowledge is neither necessary, nor even useful, if he be engaged in some other occupation than the one in question.

We in the schools face a truly serious charge, too widespread to be ignored. It is a commonplace that most grown men and women would find genuine difficulty in securing even a passing mark on many of the tests now given to children in their seventh school year. Unless one be by the nature of his occupation forced to become reacquainted with the more detailed parts of his earlier school work, no small fraction of that earlier work seems to pass entirely out of mind with no appreciable loss. We are obliged to remember how to read, to write, to spell, to solve simple arithmetical problems, to recall in a general way the political divisions of our globe and especially of our own country. Our appreciation and usefulness as citizens is increased as we know more of the history of our country and of the world's civilization. Yet most of the knowledge which mature men and women (who are not school teachers) find available for their daily work or pleasure appears to them to have been secured outside of school.

As teachers whose very livelihood depends upon a

knowledge of the things we teach, can it be that we have assumed an importance for much of our work that is far from its true importance in the world of affairs?

To no small extent our pupils, particularly our adolescent pupils come to school imbued by their parents or their associates with more or less distrust of the value of what they are studying. All admit that "education" is a thing highly to be prized. All may be convinced that the seemingly impractical information gained at school is still practical when it comes promotion time — and yet there is an undercurrent of suspicion that the whole system is artificial; artificial barriers being set up to make useless knowledge a temporary necessity.

Where there is so much smoke there may be some fire and it ill behooves us to dismiss from our minds a serious consideration of this conflict of ideas. On the contrary, particularly in the junior high school, we must strive so to select and impart the information in our hands that our pupils may be led to see its genuine worth if such exists. At the same time we will be extremely careful to exclude from our work such exercises, topics, or discussions as we would find difficult to defend before an impartial non-school jury of peers. It may seem unfortunate that we have pupils whose further education will lie in other hands. If we were only free to plan *all* our pupils' work then we could plan for life and not for the next school year, some enthusiasts may say.

Even so, our part is to make our pupils' next step secure. We must recognize our limits and make the most of the opportunity we have. Perhaps the situation will not seem as bad as it at first appears and we may yet be able to use (as we must agree) desirable teaching matter that will be worth remembering after school work is a thing of the past.

For a beginning we need not concern ourselves greatly with a review of such elementary school work as is of little value for the new work just ahead. Here at least is a distinct gain. As for the elementary school work which we may select for completion, to this we may apply our rules most rigorously. Is this work merely interesting to the teacher and entertaining to the pupil, bits of information which he will be called upon to review and re-study later on if he is ever to use it for his work or recreation? Or on the other hand will this proposed work prove a real necessity in helping the pupil to find himself now and an essential to the not far distant work he will soon take up?

Furthermore, we may find it possible with the free time secured by the elimination of elementary school reviews and of some elementary school topics to work out an approach to the required senior high school work that will allow us much of the added freedom that we seek.

In default of mental tests that will predetermine each pupil's fitness for a certain line of work, we shall use so far as we must the method of trial and error. We shall give our pupil not simply information that will be useful, if for example he enters technical work, but information that he recognizes, at the time, as technical training, given him for the purpose of helping him to discover his own talent for more instruction in that same field. Similarly our emphasis will again be given to the phase of the work that is particularly of commercial value—with the same purpose in view. Again there will be emphasis upon the scientific interests. In each case, as far as his mentality permits, the pupil is made fully and genuinely conscious of the fact that he is for the time concerned with information or training that is a

sample of the work necessary for success in some one of the greater divisions or human occupations, one of which he must ultimately select. It is not sufficient that we give such experiences in special training, no matter how thorough we may be about it, unless at the same time we make the recipient of the training a co-experimenter with us. If, however, we do this we will find unnumbered opportunities for this experience in the regular first year high school work. Indeed we may begin to believe that the pupil's experimental experience depends less upon our unrestrained selection of the subjects of study to be followed, than it does upon the keenness of the subject-teacher in disclosing to his class the varied nature of the experiences provided by his subject as they occur in his daily work. Each teacher must be able to analyze his own subject into those elements that will be of value in providing training in special fields other than his own.

Too often, we must admit, the teacher of each high school subject proceeds almost entirely on the assumption (of which he himself may not be conscious) that his pupils are to become teachers of his specialty, when they begin their life work. Too often the teacher of English, mathematics, science, or what you choose, emphasizes those things in his instruction that interest him as a teacher—that would be necessary for the training of one who planned to become a teacher himself. Too often the topics that have selective value for the possible technician, tradesman, or physician, entirely escape his notice. However, our point here is that the mere selection of certain subjects for study does not of necessity secure for us all that we seek. This phase of our problem we will study at more length under our discussion of the subjects we may teach. For the present we can add this one requirement. The subjects of study

selected for our junior high school work must be capable of furnishing such a variety of vocational experiences as will assist the pupil in his selection of the line of work and study upon which he will sooner or later specialize. At the same time we must not forget our earlier requirement, that what we teach must be immediately useful either for its own sake or as a necessary step toward some other useful knowledge that is clearly within sight.

The success or failure of our junior high school idea is not dependent by any means, we now realize, upon the names our courses bear, nor wholly upon their content, but more and more upon the methods we employ in giving the instruction in the subjects we select.

It will take but little study to prove where our chief demands lie. It will profit us little if we give our fourteen year old pupil knowledge that he will find useful at twenty-four if at the same time we fail to give him that information that will be necessary for his school success at sixteen. The nearer demands of our own work and of the work of the senior high school must be met first. On this point there can be no debate. Even where it may lead us to teach subjects which we firmly believe to be of no ultimate value, we must make our pupil's next step secure. Only as we are able to convert the higher schools to our point of view and so to a change in their requirements can we be truly free to select for study such subjects as will truly meet all the requirements of our avowed aims. That such changes are yearly being made in the requirements of the senior high schools and of the colleges should give us faith and hope that ultimately our ideals will everywhere prevail. Even with the restrictive requirements of the higher schools as they stand, modified only in such minor details as we may locally secure, there is still a surprisingly great freedom of selec-

tion permitted us if we remember that we are able to begin this advanced work *two years earlier* than under the "eight and four" plan we are giving up. Because the demands of the next higher school are the most compelling we shall choose the lines of work they will later require, but in our methods and in our approach we shall be more concerned with our newer demands which we have just considered.

If our junior high schools are to give, as we plan them to give, a general introduction to later work in the shop, the office, or the senior school, our courses themselves must be general and introductory.

As a basis for further discussion may we now consider the following lines of study in which the senior high school will expect to find our pupils reasonably well started before they leave our junior school.

The senior high school, compelled usually in turn by the colleges, requires of us one year of training and information in certain definite lines:—

1. English (literature, essay writing, grammar)
2. Mathematics (arithmetic and algebra or geometry)
3. A foreign language (French, or German, or Spanish, or Latin)
4. Science (natural science)
5. History and civics (social science)

and possibly also minor demands in

6. Drawing, Music (appreciation, or technique, or both)
7. Shop work or domestic science (manual training)
8. Physical training and hygiene.

Even if we choose we have no escape from the requirements in at least the five major lines. Our freedom lies in accepting the divisions of the higher school work as we find them, but in working out *our own approach* to the requirements that lie ahead.

In the first place if we are to help our pupils to find themselves we cannot do so by offering only that instruction that is required by some ONE line of higher education, be that technical, scientific, academic or commercial. We must plan to provide experiences in all fields for our entering pupils. From the very start and without exception during our first junior high school year we must provide work in all required lines that will, so far as human ingenuity can fashion it, be valuable in helping the pupil not only to choose his life work wisely, but which will actually help him to begin his training for it by giving him information useful long after, as well as now.

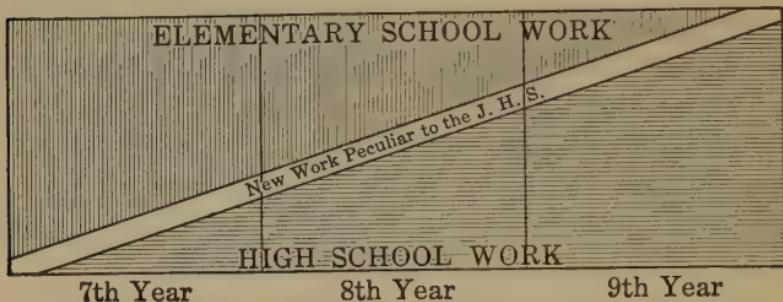
At Speyer School several experimental combinations have been tried. In some subjects the completion of such elementary school work as was retained was planned for the end of the first junior high school year. In other subjects this work was supposed to be completed at the end of one and a half school years.

As a result of many experiments the Speyer School teachers and supervisors came to agree that some portion of the work of the ninth school year (first high school year) should be begun in every subject on the very day the pupil enters. Similarly it was agreed, as the result of experiment, that some part of the so-called elementary school work should continue throughout the entire three years of the junior high school course.

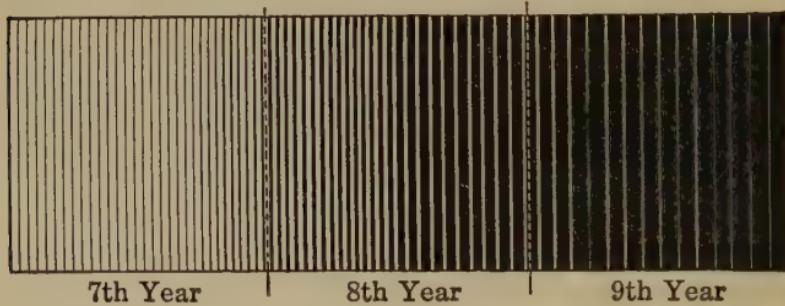
Varying to a certain extent with each general introductory subject, the plan finally adopted may be best shown by the diagram below:

As a matter of fact the divisions between the three kinds of work were never sharply drawn, but were so fused that the pupil was never aware that he was studying work that experts might separate into elementary, high, or original school work.

Our diagram will serve, however, if we remember that it applies to the approximate quantities of the three elements fused in each year's work rather than to their method of presentation.



A more accurate diagram though one less easily read would show the three school elements as three types of shading in which no definite lines of separation appear.



In general it was found that there were many topics formerly reserved for the ninth school year that were easier of comprehension than some of the work previously required for the seventh school year. Other things being equal, the best results were secured when all the work was graded on the basis of its ease of comprehension by the pupil rather than upon any previous logical (or illogical) grouping. For a single example, in General Introductory Mathematics the simple use of al-

gebraic x, y and z and the addition of simple algebraic sums (formerly never begun before the ninth school year), was found far easier than the finding of interest for years, months and days, formerly required in the seventh elementary school year.

Indeed when one sits down with all the possible introductory work of the three junior high school years in some one general subject spread face up before him, it is amazing to discover how many of the so-called "harder subjects" owe their difficulty not so much to their inherent complexity as to their conventional method of presentation upon a strictly logical basis.

On the other hand, although propositions reserved for the sixth book of our old style geometry if analyzed may prove to be easier than some of the examples in profit and loss in our seventh elementary school year, yet we would not go so far as to say these propositions should of necessity be taught in the earlier years simply because they are easy of comprehension.

Having agreed in a general way that the old school plans should not be followed, but rather that we should take up the new work according to its ease of comprehension, we find another qualification necessary.

Unless the new information, so easily acquired, is itself of value in helping the pupil to comprehend more clearly the larger topic immediately under discussion, it has no place in that day's work, nor in any day's work where it fails to be a *useful* or a *usable* addition to the child's sum of knowledge. Such new work as we introduce must appeal to the pupil not only as something in itself worth knowing, but equally as something really necessary for the better comprehension of the work either immediately at hand or at least just within reach.

We may conclude then that in our junior high school,

we will follow five major and two or more minor lines of work as follows:

1. General Introductory English
2. " " Mathematics
3. " " Social Science
4. " " Natural Science
5. " " Foreign Language

and for the schools that require it

6. General Introductory Art (Music — Drawing)
7. " " Physical Training
8. " " Shop work

These first seven fields of work we shall discuss at length later in separate chapters, but here we may well make a rapid survey of the implications of our previous discussion.

In each general introductory subject we will begin at once, in the seventh year, the work of the old ninth school year (first high school year) taking this new work gradually. With it we will combine some parts of the old seventh and eighth school years adding such entirely new work as may be advisable. We have already dismissed the idea of continuing the old style seventh and eighth year (elementary school) work and then adding a ninth year of straight high school work. Those few school systems that have tried to found their so called junior high schools on this latter plan have met with small success. Those that believe a junior high school can be formed by merely grouping the last two years of the elementary school and the first year of the high school in one building or under one principalship show that they have absolutely no conception of the junior high school idea. *No mere change in building or in supervision can work an improvement if the old seventh, eighth and ninth year plans of work continue unchanged.*

Having agreed upon our general lines of work and to a certain extent upon the general method to be followed we may consider the question of time allotment as an important factor in working out our new course of study.

For the seventh school year, our first junior high school year, all our pupils will follow a uniform course of study so far as subject-matter and time schedules are concerned.

The work itself will be the same for all, but will not be as formerly a preparation for but one type (if any) of advanced work.

Our aim may be more evident if we say that our first year work will be *uniform in its variety* giving such experiences as will help the pupil to discover his own aptitudes and make, under guidance, his selections of one of the five courses that begin at the end of this (seventh) school year.

The time schedule for the junior high school year may be most economically worked out if every one of the seven subjects of study is assigned a class period every day.

TABLE I

Seventh year: Weekly Schedule

General Introductory	English	5 (+1)
" "	Mathematics	5
" "	Social Science	5 (-1)
" "	Natural Science	5
" "	Foreign Language	5
" "	Art	5
" "	Physical Training	5
Total periods		35

To be sure, such a schedule takes every single period of a thirty-five period week, but it is still possible to

arrange a weekly schedule of recitations and home study periods that will not prove a burden to the health or progress of any normal child.

Physical training as required by law in New York State comes once a day and acts as a recess from the more confining work in other subjects. At least one excursion each week lessens the amount of recitation work by two periods. The work in introductory art (drawing and music) lightens the weekly schedule by four periods of unprepared work. The class room period in oral English is no burden, but rather a period of enjoyment. One assembly period taken in turn from the major subjects English, mathematics, social science, natural science, lightens the total week in these subjects by one period a week. One period of music is always held in assembly for music appreciation or chorus work. Finally in order that the nightly schedule of home work preparation may be equally arranged some subjects may be required on certain days to give a study period (unprepared lesson) instead of recitation period for one of their five periods for that work.

Our weekly schedule is then lightened as shown below:—

Total school periods weekly.....	35
Unprepared periods—	
Physical training.....	5
Introductory Art.....	4
Oral English.....	1
Assembly.....	1
Excursion.....	2
Subject study period... 2 +	15 +
Balance prepared periods.....	<u>20</u>

This leaves a schedule of twenty periods of class room recitation which may further be lightened if necessary

by the substitution of more subject study periods to take the place of prepared work.

However, four periods of home study assigned on the basis of one half hour's home study for each subject *as a maximum* does not seem too hard a program.

A total of two hours *maximum* home study appears to be a reasonable requirement, if the teacher understands that the maximum is not to be the rule but the extreme limit. One and one half hours' work is the rule at Speyer School.

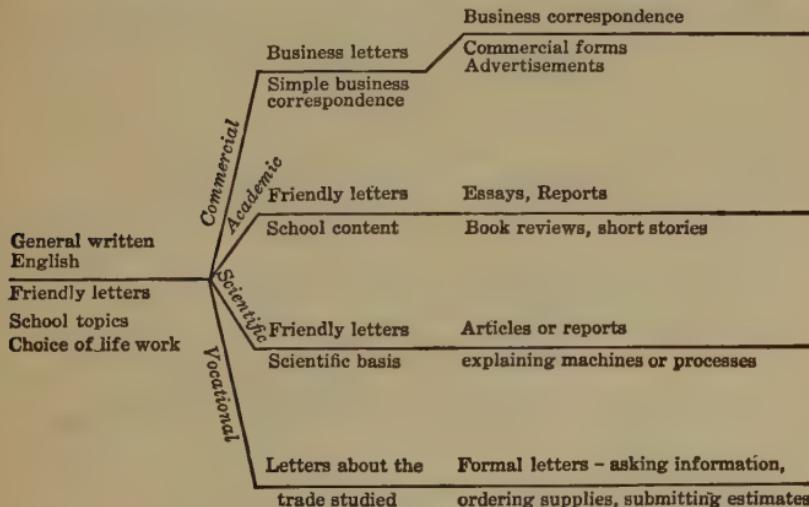
Allowance must be made as early as the eighth school year for the progressive differentiation of the junior high school leading to the various high school courses that lie ahead.

In English the Literature and the Oral English may remain the same, but Written English may have a dis-

SEVENTH SCHOOL YEAR

EIGHTH SCHOOL YEAR

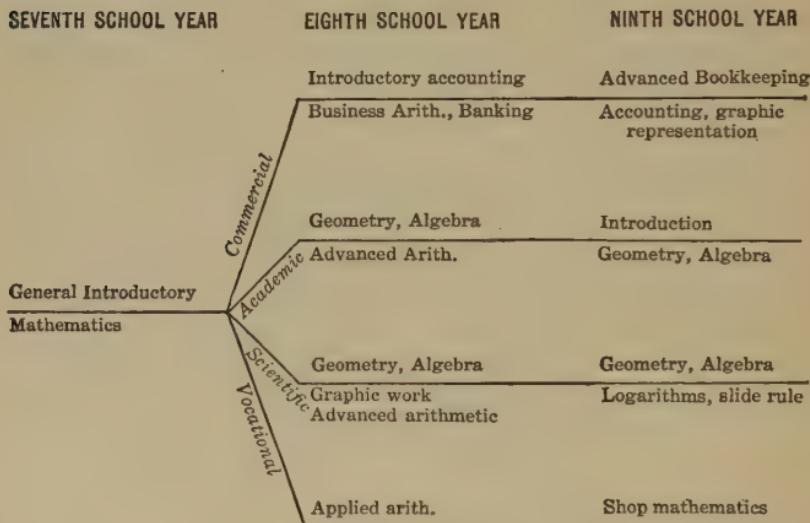
NINTH SCHOOL YEAR



tinctly commercial trend for those who will later enter a commercial high school. Similarly, for those who will

enter a technical, or vocational course, the Written English work will be closely correlated with the work ahead.

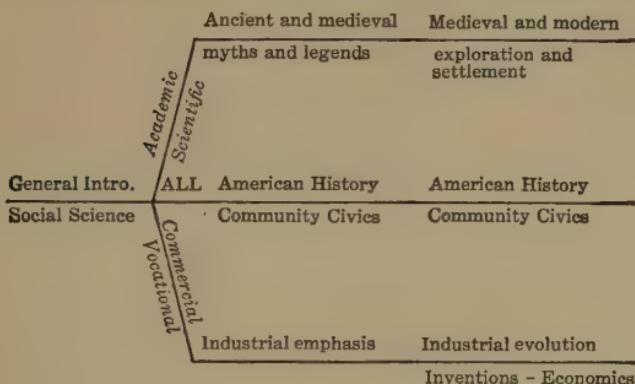
In mathematics this differentiation will consist in substituting introductory accounting (book-keeping) for the algebra and geometry of the general course for the pupils who are beginning commercial work while for vocational pupils the emphasis will be placed upon applied arithmetic, algebra and geometry as used in the shop or trade the pupil expects to enter.



In Social Science the general introduction to a history of the world and of the United States in particular, will be continued, except that for commercial and vocational pupils more emphasis will be laid upon the economic and industrial phases of the development of civilization than upon the acts of political or military leaders. This study of industrial evolution will be followed by all of the pupils except those who are preparing for the academic, or scientific, high school courses. For all pupils

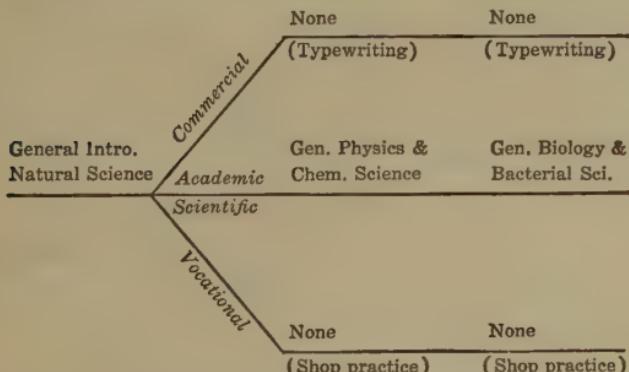
of whatever course the new course in community civics will be the same.

SEVENTH SCHOOL YEAR EIGHTH SCHOOL YEAR NINTH SCHOOL YEAR



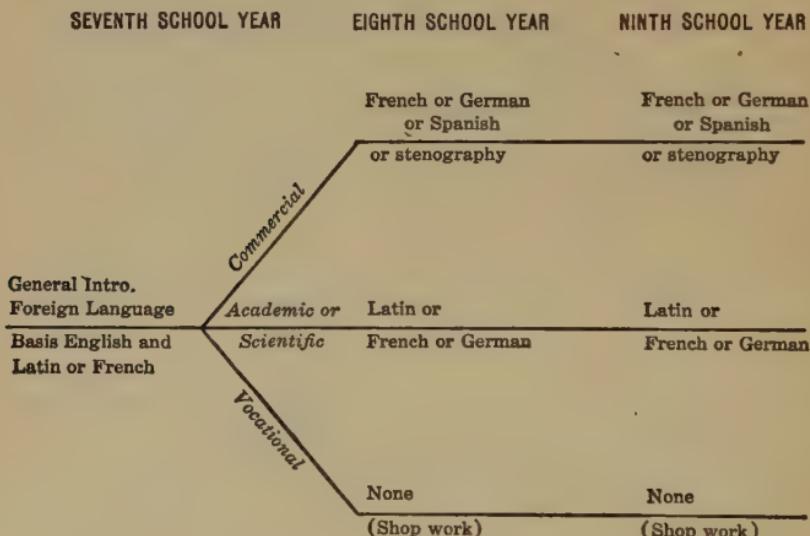
The necessities of the weekly time schedule will prevent all vocational pupils from continuing in general natural science after the first year and will make it difficult for commercial pupils unless they are exceptionally able to continue with natural science in addition to a foreign language and typewriting.

SEVENTH SCHOOL YEAR EIGHTH SCHOOL YEAR NINTH SCHOOL YEAR



Stenography will not be taught to those commercial pupils who will get that training later on in the commer-

cial high school, but commercial pupils whose school training will terminate with the end of their junior high school period will be permitted to take stenography instead of a foreign language.



A series of diagrams may show the general plan of progressive differentiation.

For the eighth and ninth school years the general distribution of time for the differentiated courses may work out more or less in accordance with the plan given below in which the periods per week are shown under five possible lines of work.

Periods Per Week Eighth and Ninth School Years

	Academic High School	Scientific High School	Commercial High School	Business Employment	Vocational Employment
English	6	6	6	5	5
Mathematics	5	5	5	10	5
Social Science	5	5	5	5	5
Natural Science.....	5	5	..	..	..
Foreign Language	5	5	5	..	..
Typewriting .....	..	..	5	5	..
Stenography .....	..	..	..	5	..
Introductory Art.....	4	4	4	..	..
Physical Training	5	5	5	5	5
Shop Work .....	..	..	..	..	15
	35	35	35	35	35

If we really believe that our pupils should be chiefly concerning now with acquiring information that will still be worth while ten years from now, we might be led to select for study subjects that are entirely beyond their mental range.

Our problem first is to select for study such work as will be necessary and useful at the very time it is acquired in helping the pupil to find himself. In addition to its present value, however, the subjects of study must be necessary and useful for understanding the new work that lies just ahead. Finally, if our subjects of study are to really fill our requirements they must have in them elements that will be necessary and useful to the pupil many years after he has studied them in school.

Our junior high school with eyes facing forward helps pupils to find themselves and to rely increasingly upon

themselves in studying willingly subject matter of unquestioned value to the student both when it is studied and in after life as well.

1. What is the attitude of the man on the street toward school work and why does this attitude persist?
2. Why may a teacher easily come to assume the importance of his specialty?
3. Why cannot the junior high school plan its work on the sole basis of its permanent usefulness when school work is completed?
4. Explain the methods we must employ in finding our pupils' fitness for special lines of work.
5. What false emphasis may I as a teacher often place upon the topics I teach in my specialty?
6. Of what significance to my pupils is the immediate usefulness of the subject I teach?
7. What major lines of work are we obliged to follow in the junior high school?
8. What must we aim to do in each major line besides giving our pupil the subject matter that the senior high school may require?
9. On what basis should the graded sequence of topics in each subject be arranged?
10. Plan a weekly time schedule for each junior high school year.
11. Defend the schedule planned.

CHAPTER V

GENERAL METHOD IN THE JUNIOR HIGH SCHOOL

PART I — RATIONALIZATION

Many years ago a teacher of Latin in the room adjoining mine was accustomed to interest his first year high school pupils by insisting upon the value of a study of Latin for all occupations his pupils might follow in after life. Over and over again he would assure his pupils that no matter what they did when they left school they would do that thing better if they faithfully studied their Latin lessons for him. I have heard him assure boys in his class that they would be better office boys, better salesmen, better electricians — and the girls that they would be better teachers, clerks, or housewives if they would apply themselves to a study of Latin. This assurance was given not on one day in the term, but at some time during practically every Latin lesson, day in and day out, until by mere insistence without argument he built up a faith in the value of Latin that secured the first place for that subject in the pupils' minds.

However far this teacher may have let his faith dictate his facts in these assurances, he at least had found one fundamental basis for high school instruction. Junior high school pupils have an abiding interest in doing better the things they will do anyway, however much they may disregard their daily lessons.

If as a result of our training, our pupils actually do better those things they will do anyway then we feel that our efforts for them have not been in vain.

Too often, we must admit, boys and girls of adolescent age who are permitted to shirk their lessons and to evade every school responsibility, are becoming more or less surely trained to do increasingly worse the things they will do anyway.

Let us admit that our schools do not of *necessity* train better workers, that our subjects of study do not by their intrinsic, undemonstrated worth, work improvement in our pupils' subsequent careers, and we are in a better position to make our daily efforts for our pupils' welfare unquestionably worth their while.

Among our entering pupils we always find some who in the parlance of the faculty-room simply "eat up" their work. It makes little or no difference to these pupils what subjects they may be called upon to study — let it only be known what the teacher requires and they will set themselves steadfastly to the accomplishment of their task. Whatever be the motives that impel such a group to industry, their assiduity is an undeniable fact. This group of earnest students is always rated high in school work, always successful at promotion time and usually successful, though by no means always so, in their work on leaving school. It is scarcely possible, however, for any teacher to take great credit to himself for the training of such pupils — they are what they are by no virtue of the school or its instruction, but by a heredity for which the school can neither be praised nor blamed.

By far the larger group of adolescent children come to school at least partly under protest. They welcome the holidays and feel no sense of loss if their work moves

slowly. Every lesson they are assigned is more or less a disagreeable thing to be gotten out of the way with as little effort as possible. These pupils may like their school, appreciate their teachers and for the most part do their daily work in a satisfactory manner, but they are rarely, if ever, eager to spend their free time in school work.

There may be, deep in the hearts and minds of these pupils, some faith that in some way, to some extent, they will be more successful men and women as a result of their school training, but this faith is scarcely strong enough to serve as a motive for daily work.

These young adolescents are none too ready to accept such a faith to explain the incongruities they daily observe between the world of work and the world of study. If we would secure the industry we ask, we must take pains to show our pupils the reasonableness of our daily assignments in terms of whatever work our pupils hope to undertake on leaving school.

From his superior position, knowledge and authority, the teacher of each subject, enthusiastic in his faith in that subject, looks down in disgust at what he may regard as his slacker pupil. For the teacher who earns his living by teaching mathematics, for example, there can be no doubt as to the value of mathematics in making for his own success. For him mathematics is food, clothing and shelter. Gradually he comes to believe that the pupil who does not regard mathematics as a thing worth while has some ill-defined, but undoubted moral delinquency. Yet if he be a teacher of unusual merit he may be able to get the pupil's point of view.

For the pupil the period in mathematics is merely a small, pleasant or unpleasant, incident in his school day. The pupil will be fed, clothed and sheltered whether or

not his work in mathematics is up to the school standard. Neither his parents nor his playmates will think much more or less of him if his daily work is good or bad. No pupil wants to be left behind when his class is promoted — no pupil can be said to enjoy failure — yet there is always the question as to which is, after all, the greater loss, the daily loss of time to read interesting books, to play interesting games, to join interesting playfellows, or such loss of prestige as may follow his failure to be promoted. The usual result is a compromise by which the pupil endeavors to get the maximum of free time for play with the minimum of school work for promotion.

Can we blame these children for such a choice as they really make. If children were able to judge relative values as well as their parents there would be little or no use for either schools or teachers. It is because children are children, for the time an only partly civilized race, that they need instruction at home and in school.

Children, when wholly free to choose, by no means always select the easier way, but usually, if not unfailingly, do select the more pleasant way to spend an hour, a week or a month. In the old school days the birch rod made sure that the path of duty was always more pleasant. School work was not made more attractive, but shirking school work was made more painful.

Even though the birch rod may be relegated to the rubbish heap our best boarding schools control their pupils' industry by no very different method. The boy or girl who shirks is not actually made to suffer physical pain perhaps, but the graded loss of school privileges, the confinement to the study hall, the exclusion from the athletic teams, the loss of holidays and similar deprivations are all designed to make the way of the transgressor artificially hard.

In our public day high schools we have neither the birch rod, nor the twenty-four hour control by which we can make the disagreeable daily lessons more pleasant by a manipulated comparison which makes the avoidance of these lessons still more disagreeable. There remains then for us only the possibility of making our school work so reasonable that the doing of it will actually be more pleasant than the leaving of it undone.

We can avoid, if we wish, taking sides upon the merits of the effort vs. interest controversy if we frankly admit that we have no way of securing our pupils' efforts except by leading the pupils to take an interest in their work. While we may invent and employ upon our shirkers all legitimate penalties and deprivations, we can never hope to get a high degree of industry in our classes as a whole except by helping each individual to get some actual satisfaction, some genuine pleasure, from doing the school tasks we constantly propose.

To return to our Latin teacher, though he may have sadly stretched the truth in his efforts to secure industry in the study of Latin, nevertheless he had found a fundamental interest for his, and for all, school work. If pupils can be convinced, and usually they are not convinced, that as a result of school study they will *do better* those desirable things (often to them wholly unrelated to school work) which they will ultimately do anyway, the question of interest vs. effort settles itself.

There is for us then of necessity but one thing to be done to make all our work appear a preparation, as it ought to be, for doing better whatever worthy undertakings the boy or girl will later enter upon. It will not be sufficient for us to tell our pupils that it is enough for them to know that the allwise school authorities have put these chosen subjects in the school curriculum because

they are necessary to the pupil's future success. Indeed it will be hard for us as teachers of science to include all the school's grammar in such a divine-right group. Equally hard will it be for the new teacher of English to give even semi-divine sanction to all the intricacies of algebraic surds, yet it is scarcely possible for us to claim for *our* one subject, our specialty, the sanction which we ourselves may deny the work in other lines.

If for a time in planning our work we put from our minds our real pupils and pretend that our fellow teachers are the pupils of our class, we may be aided in discovering those things in our own work which actually have unquestioned educative value. Indeed unless we plan forever to alternately bully and cajole our pupils to their work, we must have aims and reasons that will stand the criticism of our fellow teachers of other subjects.

If we accept Professor Briggs's statement of the guiding principle of our junior high school work — and no better statement has yet been made by any one — we must not be content with simply selecting and assigning the school work which we as individuals believe will make our pupils *do better the things they will do anyway*, but we must never forget that until we have convinced our pupils that our assignments will have this ultimate value, we have done only half our own work as teachers.

So it is worth while for us as teachers to spend no end of time and effort as our lessons progress to make a case for our subject and to remember, no matter how distasteful such a position, we are still lawyers for the defense, in the trial of our subject, with our pupils sitting as both judge and jury. Therefore if we would gain the verdict which will secure our pupils' industry as a result of the satisfaction they will get from doing their daily work, we must spare no pains and lose no op-

portunity to make our case strong in our pupils' minds.

Time is not wasted that is spent in convincing our pupils that they will benefit directly from what we will try to teach them. At the beginning of our work we may spend almost half the time in making plain the usefulness of our subject and we must never allow this side of our work to suffer from neglect.

We know as experienced teachers that it is fatal to begin any new work with a review of what has been previously covered, no matter how well or how ill that earlier work may have been done. We know that the way to kill interest in something new is to rub the bloom off the peach by too much preparation. So in each new subject and each new phase of an older subject we take up the new work as we reach it with practically no hesitation or delay. We can never hope to make a case for our subject by a single general appeal which will secure an acceptance of our contentions once and for all. The converts of our first months are back-sliders of the second month and so to be successful our appeal must be continuous. Not that our pupils do not gain much by taking up a new subject in the proper spirit, but that the mere beginning well is no sure promise of enduring well. Therefore from day to day we must make unfailing and studied reference to the value of our subject even though it appear we do so most casually.

What may appear to the class almost as an aside — something merely noted in passing — may be a most vital point in the teacher's daily preparation. Some reference beginning "You will use this . . .," "You will find this . . . very necessary when . . ." or "This information (ability, skill) will be very helpful when . . ." will often be the means of saving for the school some doubting Thomas whose faith in the real value of your

subject may, all unknown to you, have almost reached the vanishing point.

Of course we all believe in the value of working, if not indeed always from a sense of duty, yet not uncommonly from that motive. If we can build up this sense of duty we owe it to ourselves and to our pupils to do so.

Nothing that we have tried and are trying to do to make our work appear of unquestioned ultimate value need keep us from trying to develop that ethical sense which will lead our pupils to take honest pride in work well done from a pure sense of duty without the motive of self interest. Nevertheless it is wrong for us to assume that while as teachers we would be morally delinquent in failing to teach the subject for which we are engaged, our pupils in turn may be equally delinquent morally, if they refuse to study from a sense of duty alone, the work we assign.

The one controlling thought in junior high school method is reasonableness. In this it departs from the practice in both elementary and high schools. In the elementary schools the compulsory education laws compel attendance and provide pupils who cannot long escape or avoid the tasks assigned. In the high schools, on the other hand, the pupils usually are obliged to leave school (as they do in such numbers) to avoid the assumption that they are in school to do the tasks assigned without questioning their value.

The junior high school alone assumes the burden of proof, if it is true to its ideals. The junior high school teachers alone voluntarily relinquish their right to teach their subjects by virtue of their position of temporary authority and seek rather to justify before their pupils in the classroom the right of their subjects to the pupils' interest, effort and application on the ground of the

reasonableness of the work assigned. The junior high school pupils alone are granted, and indeed are urged to assume, the right to question the reasonableness of the work they are daily asked to do and by being convinced of its present and future value are led to work more intelligently and with greater self-benefit than the pupils of any other type of school below the college or university.

PART II — ARTICULATION

As a part of any discussion in General Method may come a consideration of the general attitude of the junior high school teacher toward the work his pupils will soon take up in the senior high school.

Unless there is complete sympathy and a full comprehension of the aims and purposes of each school, the pupils are apt to suffer by the break at the end of the ninth school year as much as they now may suffer in going from the elementary to the high school.

Because a great deal is being said and written about the "articulation" of the junior and senior high school a brief consideration of some of the most important factors that experiment and experience have shown necessary may not be out of place at this time.

The word "articulation," often applied to the relation of the junior and senior high schools, implies the joining of things more or less distinct though as closely "articulated" as the arm and the body in human anatomy.

A better picture of the ideal relation of the junior and senior high schools, if taken from anatomy, is the way our muscles and tendons unite. Innumerable microscopic strands of connective tissue from innumerable muscle fibres are extended to a point beyond which there is no

longer muscle tissue but only tendons — yet the tendon reaches and is attached to every part of the muscle.

So we may picture the ideal relationship of the senior and junior schools — the aims, purposes and courses of study so closely bound that even specialists cannot tell where one leaves off and the other begins. The separation in years and in buildings we should aim to make of no more actual significance than is the length of the sleeve to the arm muscles it covers.

The junior high school is primarily a finding and a sorting school — here the tastes, aptitudes and capacities of pupils are to have an intellectual try-out, based upon real *first hand experience* with some of the school work that lies just ahead.

No longer must children make their selection of a high school, or of a high school course, a matter of chance, of faith, or of blind obedience. No longer must children enter a high school *first* and find out what is taught there *afterwards*.

There should be in the junior high school, which is a "finding and sorting" school, courses of study that are finding and sorting courses.

The lines of work that lie just ahead are not merely studied *on the map*, as formerly, but the pupil actually travels *in person* along each of the main lines of advanced study, if but for a very short distance, yet far enough in most cases to show the pupil, his instructors and his parents, where that pupil's talents and aptitudes lie.

I. First among the essentials for the perfect and harmonious coöperation of the two schools — or the two phases of one school as they really are — is the planning of courses of study (or if we modernize our terminology "curricula") that enable the pupil to make his successive steps of progressive differentiation and special-

ization in his work come as the result of actual first hand experience in his class room.

It is reasonable to expect that within a very few years we shall find in the junior high schools a plan consisting of one, two or three years of work along these principal lines:

1. General Introductory Mathematics
2. General Introductory Natural Science
3. General Introductory Social Science
4. General Introductory English
 - a. Magazines
 - b. Newspapers
 - c. Classics
5. General Introductory Foreign Language
6. General Introductory Art
 - a. Drawing — Manual Training
 - b. Music — Vocal
7. General Introductory Body-training

It is unnecessary to call attention here to the absolute necessity of having these courses or curricula that are anywhere to be locally administered — planned either by one mind, or by a group of minds in conference, to the end that:

1. Each course shall *first* of all embody the principles of unity in purpose, and grading in difficulty, and that
2. Each shall be, as far as humanly possible, made up of selected bits of reasonable adolescent experience rather than of selected excerpts from secondary text books.

II. A second essential to a perfect and harmonious union of the two phases of secondary school work is *unity of supervision*.

It has been repeatedly urged in reports and surveys that junior high school administrators should be experienced as actual teachers in both high and elementary school

work. Where it is possible to secure supervision of this type, no better guarantee of unity in supervision is necessary.

Our difficulties here (and they have been and still are most discouraging) have arisen from a conscious or unconscious partisanship of the supervisor, based upon his previous experience as a teacher. There is no question but that such a partisanship works injury to the junior pupils, no matter on what side the supervisor's preferences lie.

The suggested appointment of subject-supervisors in the major lines of work — Mathematics, English, Social Science, Natural Science, etc., etc., is open to the same objection. Where are those high school supervisors to be found who combine an appreciation of their subject with an appreciation of an elementary school child's mind? The supervisor may know Biology but does he know boys?

Time, however, will cure and is curing this defect, as the places at the top become filled with those teachers who are finding their way to promotion through the junior high schools. We are discovering that the teacher that is able to teach successfully in a junior high school is equally able to teach successfully in a senior school.

As a second factor in supervision the uniform compulsory ninth year examination has been proposed. Such a proposal, while it may seem harsh, still if modified by mutual agreement to cover a series of examinations drawn by both junior and senior high school teachers in conference, has much to merit consideration. This certainly would be one way of forcing continuity of instruction and might, if not abused, lead to a better articulation of work. But on the other hand, it might as easily lead to the well known abuses — cramming for

the examinations, teaching for the *subject* only and not for the *pupil*, frightening away the less persistent and often killing off the more able along with the less fit.

Promotion by subject from the one school to the other may be highly desirable when possible, but frequently this is not possible because ninth year subjects are not repeated in many senior high schools.

Unity in plan and unity in supervision are, after all, but means to an end. Even with perfect unity so far secured we have not yet reached the pupil nor do we reach him until we enter the class-room in the person of the class-room teacher. We must admit that no *plan* and no *supervision* can do much more than to make this desirable unity or continuity of instruction possible and attractive.

III. *The coöperative efforts of the teachers* in both schools is absolutely required to make the possible become the actual. The one greatest enemy of the perfect union of the junior and senior high schools is a *lack of acquaintance* of the class room teachers in the one school with those in the other. From this ignorance springs distrust, and recriminations that lead us only into greater estrangement.

The one best means of curing this mutual ignorance and distrust in class room instruction is a remedy as simple and easy of application as it is efficacious. The actual, living unity and continuity in and between junior and senior high schools can be secured neither by printed plan nor by careful supervision as successfully as by compelling the teachers of the two schools to become acquainted with each other's work. In a word, this remedy is to make compulsory and without the possibility of escape, a personal, first-hand acquaintance of the work, the aims, the methods of the junior and of the

senior high school class-room teachers, the one with the other.

No other thing can replace this mutual knowledge secured by actual exchange of visits; no lectures, addresses, articles or conferences can be substituted for the visit in person. No other thing can claim to approach in importance this mutual observation of work and mutual study of purposes. Unfortunately, in many communities this exchange of visits will never be accomplished until it is laid down as an unavoidable duty. Hence, our insistence on the compulsory and serious nature of this exchange.

From this exchange of visits comes first a better appreciation by the teachers of both schools of the subject-matter to be taught in the other school. This, of necessity, will lead at first to a greater conformity of the junior high school to the senior requirements. The first and foremost thing that the junior high boy or girl must do is to *survive* in the senior school. Unless there is "*survival*" there can be no continuity in fact.

However well taught and well trained in other lines a junior high school pupil may be, unless that pupil is able to sustain himself in the entering term of the senior high school all is lost.

The junior high school teacher who is preparing pupils for the tenth school year must be compelled, not merely invited, *compelled* to observe high school work in that year, must be compelled to study the situations her pupils will be ultimately forced to face. These visits must not be optional, perfunctory, casual, but *required* as of as great, or greater, importance than any work she may undertake in her own class room in her own junior school.

During the initial years of any junior high school's

existence and thereafter until a high degree of continuity is secured, not less than one day each month and preferably more at the beginning, should, by official direction, be required of each junior teacher for personal observation and study in the senior high school.

But though the burden lies chiefly upon the shoulders of the junior high school teacher there is still some obligation on the other side. If, by visits and personal observations, the senior high school teacher becomes convinced that the junior pupils are really being well taught (though still in some respects not as he himself would teach them) there will come conviction that if these pupils do not at first make a complete adjustment, possibly the fault may not be *wholly* that of the junior high school. The senior teacher as a result of his visits will be led to see that possession of a college degree after the completion (many years back) of a few elective courses in his specialty does not of necessity give him and his similarly fortunate fellows the copyright on all present and future knowledge in his chosen line of work. If he has studied and learned, others may still do so, if they have not done so already. The assumption that one who has worked in other fields for years back may never approach him or his department teachers in either knowledge or technique, is a barrier to continuity that can only be removed by repeated compulsory investigations.

However, instruction that is faulty in subject-matter may more often be charged against the junior school. When faults in methods of teaching are discovered the blame is quite apt to be shifted to the senior teacher's shoulders.

In Annapolis, where our Navy officers are trained, there used to be, and possibly still is, the custom of appointing as instructors, officers who were specialists and

experts each in his chosen field. The young middies then came to their class rooms after a night of study prepared to prove to the instructor that they had mastered the tasks assigned to them the day before. The officer-teacher was not expected to "teach" as we understand the term; instead he questioned, quizzed, probed and tested the *self-education* of the students before him.

We all have seen a high school period conducted on no very different basis. The complaints that the elementary school product does not know how to study, rises from such a class room, while the elementary school answer that the high school teacher does not know how to teach finds justification in this same room. Both charges are undoubtedly founded on fact.

However, as a result of personal visits, more and more there grows upon the high school teacher an appreciation of the fact that the mere presence of a new pupil in his room does not justify his putting that pupil at once on the defensive to prove that he should not be marked a failure. More and more the high school teacher becomes convinced that his duty is not to presuppose a vital interest, but rather to create one, if that is possible, by his own methods of daily instruction. Convince the high school teacher through his required visits that a pupil is *able* to go on and you force him to the conclusion that to *lead* the pupil on is his bounden duty.

Following this better knowledge of the subject-matter by the one, and of the methods by the other, comes a sympathetic understanding of each other's difficulties that makes for continuity in work such as no mere "supervision" (whether by superintendent, principal or supervisor-specialist) could ever hope to secure.

In summary, we may secure continuity in secondary work by:

1. Continuity of Plan: secured by having one man, or one group of men in conference, prescribe the work in any given locality, for both junior and senior schools.
2. Then by building on continuity in plan: by Continuity of Supervision secured by having as supervisors those who have had experience as class room teachers in both elementary and high schools.
3. Then building on continuity in plan and supervision: by Continuity of Instruction, secured by compulsory frequent exchanges of visits (and so of ideas) by the class room teachers in the two schools.

In advance of complete agreement in matters of administration, a great deal can be accomplished by the teachers of the two types of schools, if they will get together and agree upon what is both just and reasonable in the matter of ninth year work.

In New York City twenty-seven junior high schools were organized within a very short period of time, in many cases with a complete staff and in other cases without a corps of teachers prepared to conduct the courses in special branches, such as French, algebra and high school science. While this condition was temporary and the teaching positions were quickly filled with those who had the requisite professional training, nevertheless, even without specialists, the earnest and generous coöperation of the New York high school teachers accomplished wonders for a better union of the two schools. Committees made up of one-half of high school and one-half of intermediate school teachers handed in reports in which there was unanimous agreement concerning the work of the ninth school year in all the major subjects. Through these agreements, on the one hand, the junior high

school teachers know what they are expected to furnish (and what they agree to furnish) in the line of preparation, while on the other hand, the high school teachers know what they may expect to receive and what they have agreed to accept as satisfactory.

Where it is possible for any school district, large or small, to secure results such as these from voluntary work on the part of its teachers, much that has been suggested from the standpoint of administration will be entirely unnecessary.

It may be that the senior school will ultimately absorb the first year of what is now college work and so become what may be known as a junior college. Junior colleges are already being organized in several states, and, while not favored by some existing four year colleges, still appear to be demonstrating their fitness to survive in the face of opposition.

The indications seem to be that the junior college and the junior high school, are innovations which meet a well-founded demand so that they are bound sooner or later to be permanent parts of every complete public school system.

However, if the junior high schools succeed, their success will depend more upon their improvements in general methods of instruction than upon any other innovation no matter how prominent these other factors may seem to be.

QUESTIONS

1. What good effects may result if a pupil is convinced that a subject of study is of unquestioned value to himself?
2. Do the majority of my pupils study because they want to, or because they have to?
3. In what error may a teacher fall because of the importance to the teacher of his specialty?

4. How did whippings for failure in school work make that work more pleasant to the pupil?
5. How can I help my pupils to get more satisfaction (more pleasure) from studying my subject?
6. How may I use my fellow teachers to help me rationalize my work to my pupils?
7. What do I understand by "being a lawyer in the defense of my subject"?
8. Why cannot I establish the usefulness (reasonableness) of my subject once for all?
9. Compare and contrast the possibilities in teaching my pupils to work from a sense of duty, or of teaching them to work from a sense of personal gain?
10. What are three great necessities in securing continuity of work between junior and senior high schools? Which is the most important and why?

In the first part of this chapter, speaking of *rationalizing* the subject-matter to the pupils' minds, I have likened the teacher to a *lawyer* defending his case (the advance lesson) before a *jury* (of pupils).

Now as this book goes to press a far better picture has suggested itself to me — that of a *salesman* trying to interest a *prospective purchaser*.

Our junior high school teachers are, or should be, good *salesmen* "selling" their subject-lessons as one might sell bonds or insurance to serve as a present investment, against a not too distant need.

Our pupils are *prospects*, who have time and study to *invest* if the advance lessons can be shown them as a sufficiently alluring "business proposition."

This in a nut-shell is the essence of rationalization.

CHAPTER VI

ENGLISH IN THE JUNIOR HIGH SCHOOL

In every American community where schools are maintained at the expense of the taxpayer there are usually established certain legal minima of instruction for each grade.

By such regulations a reasonable degree of uniformity in the work of each grade is obtained. The success or failure of the instructor and, what is more important, the success or failure of the pupils is largely if not wholly measured by his conformity to the conventional (legal) requirements.

The aims in the school work in English wherever they appear in a printed outline for town, city, county, or state are too often written only in part for the teacher and pupils of the school grades concerned. Too often these printed guides are the work of specialists whose pride of authorship leads them to outline work entirely out of proportion to the periods allotted their subject in the weekly time schedule. Indeed, the author, or authors, of the outline often seem more anxious to make a good showing on paper than to furnish a working guide for teacher and pupils.

In literature in each high school grade the student is supposed to acquire an intimate knowledge of a considerable list of standard classics and something more than a casual acquaintance with a much longer list of

books to be read and studied by the pupil alone out of school hours.

In Oral English the pupil must acquire not only correct usage in all matters of pronunciation, idiom and grammatical form, but be able to express himself on a variety of topics with accuracy and ease, at the same time showing an appreciation of some of the fundamentals of dramatic interpretation.

In Written English all the conventions of spelling, punctuation and form must be memorized and unfailingly employed, while in his longer written efforts the pupil is expected to appreciate and to employ unity, coherence and style.

Finally, added to all that we have enumerated, a pupil is, in most high school communities, expected to be able to dissect the written thought he and others have composed and to label each component part according to a preconceived or borrowed terminology. In a word, while only a beginner in the study of language, he is expected to possess a rather extended knowledge of its philosophy.

Many of us who have taught in the intermediate schools will feel that the entire school day with its supplementary hour of home study would scarcely be suffice to cover with something approaching thoroughness the work in English laid down for any one school grade.

The answer that appears to one earnestly endeavoring to make every minute of the time allotted to the study of English pay dividends in pupil improvement is to select at the outset certain major aims to a degree possible of accomplishment by all in the class, and to keep those aims always in mind in all that we attempt to teach.

For ourselves and our own work we will resolve to

break through the water-tight compartments that have separated Literature, Oral and Written Composition and Grammar and try to make our work in English continuous and homogeneous.

To do this will make our own work harder to plan and less easy to test. Moreover, the "incidental" teaching of grammar in studying literature, or of spelling in teaching letter writing is so easy of omission that we may find essentials being overlooked entirely. Still if we are convinced that the continued class room separation of our work into its dissected parts will hamper the harmonious development of the pupil we may still persevere in following the harder course.

Following the plan we have agreed upon, of taking our subject-matter in each division of our school work from three fields, our work in English Literature will come in part from what would have been taught in the elementary school, in part from what the senior high school will require and in part from what we feel it will be helpful to add from such new fields as may be useful in themselves.

There is no escaping ultimately the list of readings usually prescribed for the high schools by the colleges. Either through state systems of education or through voluntary associations of colleges a definite series of books is named, from which a certain number must be selected and read during each of the four high school years. If we are truly to have forward-looking schools, we must build our work so as to cover the college requirements in English literature even though we may not always believe the choice of readings the best that could be planned for our pupils. Therefore since we *must* do this work it is well that we plan to begin it very early in our junior high school course. Every few years the

list of readings from which selections must be made is revised or modified so that it is essential in planning the first year of junior high school literature that this plan will provide for those seeking college entrance, six years later, when they may apply for admission to college.

The one best list of readings for American secondary schools is, with hardly any doubt, the list published by the Bureau of Education, Department of the Interior. This list appears in Bulletin 1917, No. 2 (20 cents postpaid) and marks a distinct advance over any series of selections made before that time — and up to the present writing, since that time as well. Indeed this whole bulletin is so valuable in the analysis that it gives of the entire work in English in the seventh to twelfth school years that no teacher or supervisor of English can afford to be without it.

Without as yet discussing the actual books that we may read, let us see how our peculiar junior high school aims will harmonize with those the senior school has been following as its aim in literature. Among the most widely accepted aims in secondary school literature may be:

(a) Ability to find pleasure in reading books by the better authors and an increasing ability to distinguish what is really good from the trivial and weak.

(b) Knowledge of a few of the greatest authors, their lives, their chief works, and the reasons for their importance in their own age and in ours.

(c) Understanding of the leading features in structure and style of the main literary types, such as novels, dramas, essays, lyric poems.

(d) Skill in the following three kinds of reading and knowledge of when to use each:—

(1) Cursory reading, to cover a great deal of ground, getting quickly at essentials.

(2) Careful reading to master the book, with exact understanding of its meaning and implications.

(3) Consultation, to trace quickly and accurately a particular fact by means of indexes, guides and reference books.

(e) The habit of weighing, line by line, the passages of especial significance, while reading other parts of the book but once.

(f) The power to enter imaginatively into the thought of an author, interpreting his meaning in the light of one's own experience, and to show, perhaps by selecting passages and reading them aloud, that the book is a source of intellectual enjoyment.

In these comprehensive statements of the aims of teaching English Literature we have no difficulty in discovering the work of men whose one great interest in life is the teaching of this most valuable heritage. There is no question but what we would all be better human beings if in our own selves we could realize each of these aims. Primarily however, all these worthy aims, if realized to the fullest extent, seem to fit one for a life of enjoyment rather than for a life of useful creative efforts—save only the embryo author whose creative effort may be the production of still more worthy literature.

Without debating the extreme value of education for culture, for enjoyment, for rest or recreation, is it possible to select from these aims those that will be twice or thrice valuable if acquired in our junior high school work?

First of all to know the plots and the characters of certain books will be valuable if this knowledge secures the pupils' promotion to senior school and to college. This, however, would be equally true if, for an extreme example, the colleges could be imagined as requiring a

knowledge of several wholly inconsequential books. It is not the works themselves, but the college sanction that gives them their value. Therefore the aim of college entrance, though most forceful, is at the same time least worthy. Yet we must set it down as one of our compelling aims.

In the second place, most men of whatever profession, business or trade, if they find time for the reading of classic literature in addition to the current professional or trade literature that they must read for self-preservation, read this classic literature for relaxation and enjoyment. For the larger part, however, the great American public seeks its relaxation and enjoyment in reading current fiction whether in book or magazine form. However vulgar or ignorant the great mass of our people may be considered by those who look down from the heights, nevertheless, if we look forward we must see that the chances are at least one hundred to one that our pupil will not often read classic literature for enjoyment after he leaves us. Nevertheless, something more than a passing knowledge of the great classics of our language is necessary for one who could read even current literature with the fullest enjoyment. A true incident illustrates our point.

A young lady of refinement, the graduate of a highly esteemed finishing school for girls, was taken by her escort to see "Hamlet" on the stage. After the performance she honestly and ingenuously expressed as her greatest pleasure her discovery that "Hamlet" was "so full of quotations." This young lady from her daily and perhaps trashy reading had met with quotations from "Hamlet" without knowing their original source or setting and so had failed to get the fullest enjoyment from even the poor grade of literature she had read.

A related experience was that of a group of seventh grade pupils who were asked to write down what they believed they had gained of permanent value from reading a series of selections from Homer's "Odyssey." Imagine the teacher's surprise to find a decided majority of the class in full agreement that their greatest benefit came from the better understanding that they now had of certain formerly puzzling allusions, scientific or trade names. The boys listed among other things, Ajax tires, Achilles tendon, Olympic games, Hercules, Titan and other spark plugs, Siren whistles, Vulcan springs, Vulcanite, Vulcanized rubber.

While this may at first seem wholly ludicrous and then perhaps pitiable, finally we may come to see that after all these children may have been right in their estimate of what the *Odyssey* gave them of most value. In the professions, in business, or in the skilled trades, as well as in current literature the every-day man and woman is expected to know for purposes of the ordinary spoken and written communication of ideas, much that comes from the best classic literature, the works of Homer, Shakespeare and the Bible being perhaps the most conspicuous examples.

If we select from our required list, books that will give this information necessary to a better understanding of what others may say to us in conversation, in print and even on the advertising page, we have to some extent fitted our pupils for a happier and more useful life after they have left us.

Let us then add to our first requirement (the books that will help our pupils to advance in the school world) a second requirement — books that will give our pupils a better understanding of what others may say or write to them, in public or in private.

We will admit that we have failed to reach a very high moral plane in making our selections for junior high school readings in English Literature. Possibly we may be led to that higher plane by learning what the boys and girls of our junior high school years now read when they are left wholly to themselves without let or hindrance. We will agree that both our boys and girls read stories of youths whose wonderful adventures are those which they themselves imagine they would like to experience. The hero or heroine is such a one as our young reader longs to be himself, their experiences are the experiences our young readers would be delighted to go through in person if only assured of an equally happy conclusion.

Our young reader is lifted out of himself, transfigured and transformed; he is endowed with all the virtues dear to a boy's heart and accomplishes wonderful things for himself and his friends, usually against tremendous odds.

Our opposition as anxious parents to the penny dreadful which our young hopeful surreptitiously secures and reads is not so much to any moral turpitude of the hero who absorbs our son as it is to the false notion of life and its actual environment that this most impossible story may give the young reader. In so far as this exciting story takes our young reader into the realm of pure impossibility it acts upon him as does the drug upon the dope fiend whose glorified dreams unfit him for the realities of life and undermine his will to do decently the things the world requires of him.

If in our list of required readings we are able to find books whose heroes picture the kind of men and women we wish our pupils to resemble and which they in turn can be led to wish to imitate, we are on the high road to a useful selection that can be defended on the highest

moral plane. Limited in age, physique, in finances and even in intelligence, our pupils may still be mature, strong, wealthy and wise if we can find the books that will make the fitting personal appeal. Without danger or suffering, they may undergo attacks and hardships and by living in the story they may experience vicariously countless situations that will tend to make them wiser and nobler men and women if only our selection of a book is well made and our method of teaching it is wisely ordered.

Our third aim — which now becomes our first one in the class room — is to give our pupils in their reading with us *such vicarious experience as will tend to make them more useful, more reliable, more ambitious, more sane, more happy young men and women.*

We can scarcely attempt to discuss here the method of teaching English Literature. So much has been written from the standpoint of the student of literature that any repetition of it here would be merely a re-statement of what is already known. From the peculiar standpoint of the junior high school teacher it is, however, worth our while to recognize the extreme necessity of securing the unanimous and sincere agreement of each pupil in our class upon the value and the desirability of the aims we jointly pursue with them.

As we have agreed before and may many times recount, each book that we propose to read comes up for trial in the mind of each young and ignorant pupil as charged with being a largely, if not wholly, useless and unprofitable proposition. The time we spend in having our selection vindicated as "not guilty," on this charge, will be time well spent no matter how much time and effort that may require. We are working together in the junior high school, not only on things we teachers

believe to be worth while both now and later on, but equally upon the things which our pupils beside us believe essential to their own present success in school and still more their ultimate success when school is long gone by.

WRITTEN ENGLISH

Critics of the schools have been quick to pick out for condemnation sample letters of school children that contain misspelled words and faulty grammar. Schools and schools systems have often been held up to scorn for failure to satisfactorily drill their pupils upon these so called fundamentals in letter writing.

Yet in real life when we get a letter, or when we send one, it is the message of the letter and not its form that determines such a letter's genuine value to us as individuals. Even though we may wince at misspelled words we can think of no really serious and valuable human document that would have its intrinsic worth destroyed by faulty spelling. We might paraphrase the line from Burns in perfect agreement—"The form is but the guinea stamp, the thought's the gold for a' that." Yet in the school world the stamp of perfect form even on a "spit ball" is often revered above the rough and ill-shaped nugget of virgin gold.

Not that we would wish to appear as champions of the letter that murders the King's English and carries a phonetic spelling system of its own, but that we wish to let no examination of the superficial faults of form, blind us to the fundamental merits of the letter as evidence of human understanding. The recognized errors of our earlier writers of what is now classic English whether in spelling or in punctuation have not appeared to keep those contributions to literature from enduring

even to this day. The proofreader and the publisher, even now, keep no few errors of the approved authors of today from the pages of our more treasured books.

In the history of any written language we find in its infancy only that degree of accuracy in form necessary to carry the thought, no matter with what phonetic freedom the words are spelled; indeed at first we know there was no spelling and even much later there was no punctuation. Because at the end of centuries we have worked out a fairly fixed set of rules for the form of English writing, this is no reason why in our school work we should begin our work with children where the sages finally stopped.

Even risking the displeasure of the formalist who may be high in power, we must try to teach our children to write something worthy of correct form, before we lay too great stress on the form itself. Even at the risk of being labelled heretics in school work, we must put *content* above *form* in written English. We must keep our perspective and not overlook the forest through our examination of some faulty trees. We must remember that in the world outside the school a colorless, insipid, valueless letter will instantly find the trash basket, though this letter be correct to every last detail of spelling, punctuation and grammar. Outside of the class room there will be no kind pedagogue to mark a letter "Spelling 100%, Punctuation 100%, Grammar 100%," etc., etc. The reader alone will rate this letter as a letter—and that is the one mark that counts.

Really, the children, who do not seem to understand our alarm and consternation over their errors in form, may have some intellectual advantages over us, their teachers. Children become vitally interested in correct form only when they feel they are able to compose some-

thing that others besides themselves and their teachers will really care to read. Just as few normal children are greatly concerned over their personal appearance when they go where no one is to see them, so they are usually not concerned over any letter whose ultimate resting place is the school waste paper pile.

Indeed if we think of the content of any letter as a living boy or girl and the formal elements as that child's clothing, we can more clearly appreciate our pupils' natural point of view. Of course, that point of view may be changed, too often is changed, by years of teacher-nagging until the youngster's mind is perverted to the idea that the clothes, the form, are the only things worth while. These perverted minds may be, after all, our biggest problem in teaching our children how to write. Too often we find our intermediate pupils perfectly self satisfied if they laboriously construct a formally correct shell which clothes no thought. In this formal writing, however, even the perverted take no pleasure. They write, when compelled to write, by the teacher's order and sigh with relief when their task is done.

On the other hand, it is not only possible, but usual, for children to really love to write if they are encouraged to try to put down something that can be shown will really be of interest, of honest interest, to some reader, beside the teacher. It may be difficult to secure any degree of enthusiasm over making correct clothes to garb emptiness, or at best a scarecrow, but if the youngster knows that his effort is going out to be seen of men, the question of proper clothing becomes at last of real importance. Only in proportion as there is something worth clothing, do the fit and style of the clothes themselves become to the pupil worthy of thoughtful attention.

In the earlier years of the junior high school our aim in Written English is to help the children to write something they believe worth clothing in correct form. If in the body of their letter they find a living being that really has an appeal to some one (that is not paid to read it), something that some other person would really *like* to read, then they at once become concerned with *clothing* that thought in its proper form. Here comes our first honest opportunity as teachers to drill upon those formal things that in many schools more often stifle thought than help to express it.

Because it is easier to find subjects for compositions written on general topics and to a general undefined public (or to find topics interesting to the teacher alone) our ordinary choice of topics for Written English possesses little vital interest to the pupil who does the writing. The pupil knows only too well that the general public will never see his written effort—while aside from the stimulus of “marks” there is little enthusiasm over writing “to please the teacher.”

It becomes necessary then for us to find each time for each pupil an audience that will in reality and in truth get some genuine enjoyment out of reading the pupil’s composition.

Outside of school, in the real world of men and people, not far from ninety-nine per cent of us never actually take up pen and ink except to write a letter to a friend. There are, to be sure, the occasional business letters, but as a rule the telephone, a personal visit, or a dictated letter keep us from pen and ink. We may be reasonably sure that out of a thousand of our junior high school pupils so few will ultimately be called upon (for several years at least) to write other than friendly letters, that we may neglect the insignificant minority. On the other

hand, our pupils, if they write from any self-originated motive, will write to a friend — usually a friend of their own age — and a friend who is too far away to make it possible to substitute a call for the letter in question.

The first thing then in our written work is to find for each pupil a friend of the pupil's own age who may reasonably be expected to be delighted at receiving a letter from our pupil. However, our choice of an audience of one is not quite as easy as it appears if we complicate this choice by introducing the question of a somewhat limited source of topics. At least one in four of our pupils' letters might well be purely personal, even private letters — which the teacher alone would read (in confidence) before mailing to the distant friend. The content of such a personal and private letter must be largely a matter of the pupils' personal and individual choice. However, for the other three letters we should strive to make it possible to select the subject of the letter from the school work in English, but if not from that, then from the work in other subjects.

Let us suggest a topic that will make the pupil's effort twice valuable — first as an endeavor to write something worth reading and second as a review of some knowledge recently acquired in school. Now our choice of this audience of one becomes more difficult, because if we are to make our first requirement in letter writing *a genuine interest on the part of the recipient* of the letter and then we are to make *a topic chosen from the school work* our second requirement, we must needs give some little thought to fitting together a suitable audience and a suitable topic.

It may be necessary for the pupil to make first a list of friends to whom he truly would like to write and after that a much larger list of subjects which may be

approved as ideas to be developed in his letters. The fitting of the proper person and the proper subject becomes itself scarcely less valuable educationally than the actual writing of the letter itself.

So far our emphasis has been laid upon making our pupils' written work do what similar written work does outside the school, this is, carry a real message to a real person. We would have practically every letter serve a real purpose beyond that of the treadmill of school work. We would have every letter sent, usually through the mails, to some one who will honestly be glad to receive it and who may in some cases be expected to reply.

Subjects for our pupils' letters as previously suggested should come from the school work they are following. It has been said that no one really understands a subject until he tries to teach it. To a certain extent then we wish to make our pupils teachers of their various subjects through their written work. May we consider certain groups of subjects that may be letter topics suitable for our work.

If our pupil's correspondent is a boy or a girl in grammar school we have one point of attack; if in high school another; if at work still another. Taking our topics from English first—we may have for each correspondent an opening letter on the subject "Why we write letters instead of compositions in School." Then we may have a series based on the work in literature in which the pupil briefly tells the kind of a story he is studying and then selects one incident for more detailed description having as a motive holding the interest of his reader-friend until the end.

Such a letter might well be more or less along the following lines:—

	Dear
INTRODUCTION	Have you ever read the story of
	by? It is the story of in the time of The hero is and the heroine
BODY	The most interesting character to me is I like him (her) because
Or	To me the most interesting (most exciting, most typical, saddest, most thrilling, most uncertain, most joyful) incident is where (now the body of the letter).
CLOSING	If you have not read this book you will en- joy doing so, not only for the story itself, but for the knowledge it will give you of
	I hope my account of has inter- ested you. Can't you find time to write me and tell me what you think of it?
	Yesterday I saw who asked for you. I hope you are succeeding in
	Give my best regards to X, Y, and Z send you their best wishes,
	Sincerely,

According to the occupation of the recipient of the letter, the beginning may be varied, "Have you read.....?" "Before long you will read" "Do you remember reading"?"

A second and more difficult series is that of some personal experience compared with some incident in a book that is being read. The series might begin:—

INTRODUCTION	When I was reading.....recently I was reminded of an experience of mine in
BODY	In the book the hero and that is how I felt when
CLOSING	Have you ever had such an experience? Do you think you would have done the same as when

A *third* series may begin, "Would you like to become such a character as in the story of by which I have just read?

A *fourth* and more intimate letter — one which may have real ethical value and which would be directed only to some loving and sympathetic friend, possibly a mother or a father — might begin:—

Dear Mother:—

INTRODUCTION Do you know that I think I resemble the character of in the book called which I am reading at school. If I do not resemble closely, at least I would like to do so.

BODY Although I am only a schoolboy (girl) I am like in many ways, particularly in

X acted just as I would have done in his place, when in the story he

CLOSING When I grow up would you like to have me resemble X in? I hope you would.

Sincerely,

A series based on spelling could begin:—

My dear Henry,

Do you have any difficulty with spelling? I do and I am trying to overcome that difficulty by constant practice. The words that trouble me most are words like The way I am learning to spell them correctly is

I wonder if there are any misspelled words in this letter. I hope not. When you write tell me what words bother you most and I won't care if you don't get them all right so long as I hear from you.

Sincerely,

A series based on grammar is somewhat far fetched as a subject for a series of friendly letters. It may be difficult for us to imagine any topics from grammar that would be of real interest unless the writer were to diagram some sentences and send them as a puzzle to his friend—the diagramed sentences being a real part of the letter and carrying a real message. (We are told in most modern outlines to minimize diagraming yet so long as we study formal grammar the diagram will survive as an aid to teaching that quite too mature subject.)

In other subjects the teachers of those subjects may be called upon to furnish letter topics such as the following:—

Science

Story of an excursion.

Description of some animal, plant, or machine.

Explanation (semi-scientific) of some common phenomenon not usually understood.

Civics

A letter of congratulation to some hero of the police or fire department (from the daily paper).

A letter of appreciation to the local street cleaning foreman or to some park attendant.

A letter to a friend telling of the good work of some local town or city employee.

A story of some recent, or approaching, election and the writer's choice of candidates with the reasons for that choice.

Mathematics

A letter to a friend—explaining some short cut in Arithmetic.

Giving a puzzle problem and its solution ("How old is Ann?").

Outlining the high school course in mathematics that the writer expects to follow.

Telling what part of Arithmetic, Geometry, Algebra, the writer finds most interesting, most difficult, most useful.

History

The celebration of some legal holiday.
Why we honor the memory of
The story of some local landmark.
My favorite American hero.

Music

The story of my favorite song.
What instrument I am learning to play and how I am doing it.

Art

The picture I like best.
The prettiest design I ever saw.
When people wrote by pictures.
A description of our dining room, parlor, kitchen at home (illustrated by sketches).

And so the series may be extended. As teachers we must find something that the pupil really wants to write about, something that the reader will really follow through with interest and something that will so far as possible serve double duty reviewing school work while still serving as the topic for a genuine, and not stilted, letter.

Outside of school topics a series of letters written to the pupils' parents upon his choice of occupation will well serve the double purpose we have constantly in view. The pupil's training in correct expression is paralleled by information that will be of real value to him in selecting his life work:

The teacher of English here again becomes something more than a critic of form, because the content itself is of such vital importance to the young writer.

Such a series may begin:—

Dear Father:—

I am thinking seriously of learning to be a

This occupation appeals to me for several reasons—
first second third etc.,
etc.

If one wishes to become successful he must
be naturally I am especially successful in
school in (parts of subjects) and I enjoy
studying about

To become well trained as a the following
education will be necessary for me after I leave this school.
(Pupil outlines in considerable detail the educational re-
quirements.)

Even after all this is done I will need help in securing the
right kind of a position to begin work and I think that
..... will help me to get such a position because
.....

Do you think that the occupation of a
would be a good one for me? Please tell me your reasons
for your answer.

Your loving son,

Each pupil may well select several occupations as the
basis of a series of letters. The letters thus composed
will interest the pupils' parents and equally the writer's
fellow pupils if he is willing to release them for a class
reading. No one will dispute the fact that these letters,
if carefully worked out, may be of genuine help to the
pupil in selecting his life work.

The criticism may be justly raised here that while
some personal friend may serve as an audience for
nearly all letters that are written in the general or aca-
demic high school course such an audience will not suf-
fice for commercial training in so called "Business
English," which involves the understanding and use of
certain idioms or conventions assumed to be more or less
characteristic of business correspondence.

Aside from the occasional ordering of a real article with real money enclosed — the real business letter is largely an impossibility for the average pupil — and this brings us to another side of our Written English problem.

In all our effort to make our letters real letters that are really sent to real friends we should not entirely lose sight of the value of "make believe" in some of our written work. Our emphasis upon genuineness has been necessary to counteract the all too prevalent tendency to make all our school writing artificial to a deadening degree.

As an occasional change from our letters that are actually stamped and mailed the letter in which the writer himself is both author and recipient is a welcome diversion. As an example of this make-believe series a thoughtful teacher of Commercial English worked out a plan that meets almost every requirement.

The pupils of this class were first invited to go into business for themselves in some town or city outside of New York. The choice of the business itself was educational and involved considerable class discussion (oral composition) as to feasible and profitable undertakings.

Next came a study of trade routes, rail and water communication and the character of the population to be served — all superficial, possibly — but correlating with, and giving a motive for commercial geography.

Having selected his business, his town, his site for store or factory, the pupil from this new location writes to one or more business firms in New York to secure prices on certain merchandise needed for the undertaking.

This serves as the beginning of an interchange of letters that keeps the pupils' interest throughout a school year. The pupil first writes under his own name asking

for merchandise or credit and then replies to these letters under the names of the firms to which he had written for information. Writing again under his own name he orders merchandise, or perhaps writes again asking for more favorable terms. After the merchandise has been finally ordered and shipped some is found to have been damaged in transit and some appears to be below the specifications. This again involves an exchange of letters in which the pupil continues in his dual capacity. New orders for stock and new difficulties in shipment or in payment seem to present in succession a series of motives for letter writing that never fail, but seem rather to increase in interest as the school year goes by.

For certain work then, where the age or position of the pupil makes the real letter that is actually mailed an impossibility, the "make believe" series in which the pupil is both author and audience has its real place. Even in letters of this latter type the imitation of reality must be employed seriously and consistently or the whole series falls flat.

CORRECTIONS

The one part of the old style school composition most hated by both teacher and pupil was the inevitable red-pencilling of the finished copy. The conscientious teacher usually felt that he had to wade through, often, hundreds of his pupils' collected compositions each week. This is indeed a hard and, usually, a thankless task. The pupil when he secured once more his now defaced, though once (to him) attractive written effort, usually experienced to a degree the feelings one might have in accepting the body of a relative after an autopsy. To

reconstruct that mangled thing partook of all the joy of a post-mortem operation. There is a time, however, in the growth of a letter when any normal pupil will welcome suggestions — that time is when the letter is growing, when the ideas are only half formed, when the clay is still plastic. The pupil wants to write an interesting and a decently appearing letter and will welcome, even seek, the teacher's criticisms at this time if they are offered in no fault-finding spirit.

Therefore the letters should always (and usually only) be written in the class room when the teacher is free to help. A few blackboard suggestions — "Remember your margins," "Consult the dictionary if uncertain," "Make your sentences short and crisp," "When in doubt use another expression," will do more real good than all the red marks the teacher can crowd on the paper when the pupil has finished.

The pupil, in the meanwhile, writes what he knows is only his first rough draft and to emphasize its temporary character he writes in pencil usually and on rough, cheap paper with little or no care as to appearances, seeking only to put down some interesting truths in an appealing way, as any adult might sketch a letter later to be transcribed.

So this first draft will develop. Erasures or crossing-out will be the rule, until finally something decipherable is left ready to be dressed up in its more pleasing clothes. Such changes and corrections as the teacher is able to make on the spot and on the rough draft as it develops are the only ones to be considered. The final form of the letter is written on the school's best paper in ink with every possible care as to appearance as well as to correctness in detail. No corrections by the teacher appear on the final copy, though letters if copied in a slov-

only manner may be confiscated as too poor to send. To be sure if the writer has made slight errors that may be corrected by unnoticeable changes, the pupil may be urged to make these himself, but in general the teacher merely acts as "military censor" for this copy, to see that it is fit in appearance to be mailed.

The ratings which the teacher keeps to record the progress of the pupil are separate for content and form. The emphasis at first is almost wholly on the expression, interest and truthfulness of the letter. Only when this part of the letter reaches a commendatory rank does the emphasis turn to matters of form. Following an earlier simile, it is time enough to think of clothes when one has something worth clothing.

ORAL ENGLISH IN THE JUNIOR HIGH SCHOOL

In our Oral English we are supposed by the layman to train our pupils first negatively, then positively. We are supposed to banish forever from the pupil's vocabulary the ungrammatical and illiterate expressions they have been using for the larger fraction of their lifetime. Then we are supposed to supply the pupils with a polite and easy delivery of unquestionable English. As teachers we would be unwilling to go on record as saying that this is never done, but we would still be willing to put in writing our conviction that such a change is well nigh impossible. What we may do is to make a pupil hesitate before he murders the King's English too freely in our presence, but "with the fellows" our potential purist will still say, "I ain't got no," or become a social outcast.

It is for us to devise some plan by which our pupils may become interested in speaking to each other in

correct form. For this no better exercise has yet been found than "the class meeting" which is a regularly scheduled event of each week's program. While correct Oral English must be the rule for such a period the content of the discussions comes from questions that appear more or less vital to the life of the class in school. The first steps in the class meeting period begin with the election of class officers which must be carried out with the utmost formality under the teacher's guidance. This makes it necessary for the teacher to be, as each pupil will later become, an expert parliamentarian. There is no question here as to the "doing better" value of this work. Wherever men and women meet to conduct business as a group, there must be compliance with some established rules of order.

When the class officers are elected there may then be introduced any resolutions or motions on matters of genuine class interest. Some matters for early discussion may be the formation of class athletic teams, the arranging of a class excursion, or the discussion of some question interesting the school as a whole. It is not necessary or advisable to draw up a class constitution until such time as the need for one is felt. All that is necessary is to pass a rule that the meetings of this class shall be conducted according to Cushing's Manual, Roberts' Rules of Order, or some more modern and not too technical book of parliamentary practice.

The pupils learn that before there can be any discussion of any project there must be a "question before the house." They learn to speak to the question, or be ruled out of order and they learn that correct and simple English must be used in making motions and in debating them. The teacher as advising parliamentarian may sit beside the president and advise him at the start. Later

the teacher becomes merely an honorary member of the class ready to raise a point of order when that seems necessary, but with no vote, though a voice in all discussions. The old difficulty in getting the pupils to talk in the Oral English period becomes one now of keeping the pupils from talking too much. The teacher's one chief concern is to assist the class in selecting sensible and really worth-while topics for discussion and in seeing that the motions that are finally passed get some results in actual accomplishment. This is far different from a debating society where the questions are wholly academic. What we vote in our class meetings should be, wherever possible, productive of genuine, pertinent results.

It soon becomes necessary for the class to enact certain by-laws to make the discussions general and to debar some of the more loquacious, or less sagacious, from taking all the time of the meeting. Such by-laws may limit the time any one speaker may take to two or three minutes and may empower the president to call upon any member for an expression of his opinion upon the question before the house with his reasons, briefly stated, for holding that opinion.

Pupils quickly learn that the only way to be sure of saying what they mean is to speak correctly. The double negative, the unfinished sentence, mistakes with relative pronouns, etc., etc., disappear as the pupil is shown by his classmates that he is, through his errors, often really arguing against his own position.

In order that all our discussions be not impromptu, it is wise toward the close of each meeting to decide upon the main question to be discussed at the meeting following. This gives the chance for those most interested to prepare their arguments in advance and if we

have the rule enabling the president to call at will upon any member, it makes each pupil give some thought to putting his sentiments in correct oral form. It may be necessary for the teacher of a sluggish class at times to follow the precedent of the political convention and "plant" the maker and the seconder of the question he thinks it would be well to discuss. The teacher may even "plant" an argument here and there for or against the question, but he must do this most tactfully to avoid any semblance to trying to run the meeting. To make these meetings a success the most essential things are, first, to make the pupils realize that in honor and truth these meetings are the pupils' very own and, second, that whatever the class resolves after due deliberation and discussion, *something* will be done about it.

As in our discussion elsewhere of Written English, emphasis is laid first and foremost on having something worth while to say and second, in saying it in correct English. The emphasis upon the form, however, comes earlier and is more vital than in the pupil's written letters.

Under the heading of Civics we shall further discuss the possibilities of the class meeting for civic and ethical training. It is enough to call attention to that possibility here. The good teacher of English as the good teacher of any subject in the junior high school will always be alert to make his class work do double duty by teaching two subjects at one and the same time. In Oral English the teacher concerned at heart with correct English expression secures that expression in part through class meetings in which subjects valuable *for other reasons* to his fellow teachers and his school are being discussed.

In our class meetings then we have found an opportunity for the pupils to practice good English in speak-

ing to each other. Something more than an opportunity, however, has been found. We have found a plan by which pupils will be not merely given the opportunity, but impelled by a strong desire to speak to each other and to speak correctly.

Practice in correct English, though at this point in our study of the junior high school of major importance, is by no means the only valuable result. Indeed of all the results gained from the class meeting — more careful grammar, a knowledge of the rules of order, the freedom from embarrassment when on the floor of a meeting, speaking briefly and to the point, keeping on the question, training in convincing others and coöperation with one's fellows for worthy ends, — the greatest values are not formal but spiritual. The pupil learns politeness, consideration and team work as a means of securing greater happiness for himself and for his group. As he learns to discriminate between the rights and wrongs of questions affecting his class, as he learns to appreciate moral and ethical values that to him as an individual were never prominent, our pupil is not merely preparing for good citizenship — he is living it.

QUESTIONS

English Literature

1. What aims are usually given for the teaching of high school English?
2. How would I arrange these aims in order of importance:
 - (a) to myself as a teacher of English?
 - (b) to my pupils as students of English?
3. What reasons can I give for making *vicarious experience* the chief aim for junior high school English Literature?
4. What is the greatest danger to a pupil from reading over-imaginative stories?

5. How may I combat the tendency of my pupil to drug himself with fiction?
6. How may a pupil be led toward mental maturity of judgment through a wise use of required readings in English Literature?

Written English

1. What is one great reason why children find it so difficult to accept the teacher's emphasis upon form?
2. How may I make the work in Written English an eagerly desired exercise?
3. How would I lead a pupil to see that the selection of his audience is the most important primary step in writing?
4. Who (or what) constitutes a genuine audience for a junior high school pupil?
5. How can I find such an audience for each of my pupils?
6. How can I use my pupil's interest in his written message to awaken his sincere interest in its form?
7. Outline a plan for making Written English do double duty by using subjects from each of his four other major lines of study.

Oral English

1. How may I plan to make pupils desire to talk *to each other* in correct English?
2. What technical knowledge outside of a knowledge of correct English must I possess to accomplish this?
3. What may I select for the subjects of discussion in class meetings?
4. Why is it so essential that some positive action results from class discussion?
5. What gains aside from gains in spoken English surely accompany the class meeting?

CHAPTER VII

GENERAL INTRODUCTORY MATHEMATICS

Our junior high schools, we have agreed, should be par excellence the schools for sorting and classifying pupils according to their promise of future success.

Instead of carrying all our pupils along an identical and unvarying road to the end of the eighth school year and then saying — “Choose now, between these three or four types of high school work, or leave them all and seek employment at once” — we should introduce our pupils gradually to the varying types of work which they may later follow in school or employment, so that each pupil may be led through his own actual experience to select as wisely as his own tastes, his teachers’ advice and his parents’ wishes make possible — unquestionably a far superior selection than possible under the “eight and four” plan of former years. On this basis, we can see quite clearly what an introductory course in mathematics must be and, equally too, what it must not be.

Making our first forward step by exclusion we see that our course in mathematics must not be one designed chiefly for a single type of pupil — commercial, technical, or academic. Our course must not prescribe this much old style arithmetic to be followed by that much old style algebra in the high school sequence, but rather our course must be composed of the elements, the very simplest elements at first, of commercial arithmetic, industrial arithmetic, algebra, geometry and the beginning

of trigonometry, all pursued in general upon a special plan.

The question now arises — Is this possible in practice, no matter how desirable it may be in theory?

Approaching the course of study in mathematics from this standpoint we must search for a course which plans to open the eyes of all its students to the general field of mathematics that lies just ahead.

We wish to lead our pupils to a wise choice in their next step. To be sure, other things outside the work in Mathematics may really determine the pupils' later choice, yet that is no reason for closing the pupils' work in Mathematics with no glimpse of the fields ahead of the Elementary Arithmetic text.

Should the pupils continue their education beyond the eighth school year what subjects will they study next? The next in prospect are Accounting, Algebra, Geometry, Trigonometry. Is it right for us to make the pupil choose whether or not he will enter these advanced subjects, while we forbid absolutely any comprehension of what these courses stand for in school work?

If we decide that it would be highly desirable for a pupil sometime during his seventh, eighth, or ninth, year to have at least an introduction to these higher subjects, is it *feasible* for us to introduce any of these subjects below the age where tradition has decided the choice in most cases should be made?

In the ninth year, Accounting, Algebra and in some cases Geometry are now taught in our high schools, but that year is too late for a preliminary introduction because the pupil must settle down to his definite choice in order to gain his high school credits toward graduation.

If, then, we are to give our pupils any introductory experience in the advanced fields, that experience may

well begin before the close of his seventh school year.

Again the question arises, is it possible, or *practicable* to simplify the introductory work in these higher subjects to that degree necessary for their earlier introduction and still leave work enough to be seriously considered introductory Accounting, Algebra and Geometry? Let us consider these topics separately.

Accounting. Accounting, including Bookkeeping, which we understand to be the mathematics of business transactions, has for some time been really a large, possibly too large a part of our former seventh and eighth year work. No one will seriously dispute the possibility of finding much "Business Arithmetic" that is simpler than a great deal of the Arithmetic usually taught in the seventh year in the elementary school. This topic need therefore give us no concern from the standpoint of difficulty. Household accounts present Bookkeeping in its simplest forms and may be used to lead up to more advanced work with Day Book, Cash Book and Ledger. The problems of the store, discounts, bills, receipts and invoices are now being taught to the seventh and eighth year pupils in the elementary school. Rudimentary banking, interest simple and compound, deposits, checks and notes are also taught. Commercial high school mathematics as taught in the ninth year present few difficulties that would forbid the introduction of such few desirable topics as may be now omitted from the seventh and eighth year school work *provided only* that the numbers used, or steps involved, are not made unnecessarily confusing.

Algebra. A great advance in the treatment of Algebra and Geometry has been secured in the syllabi published by the Regents of the State of New York in 1918 over the course some of us pursued in our various schools

twenty or more years earlier, but the progress as we see it has been only half far enough.

For the purpose of making our points more emphatic may we refer with some frequency to the mathematics of our own school years.

Algebra seems to present more difficulties than Accounting. Our own memories of our early struggle may yet be far from faint, but if we will take the time to open our old texts it will not take us long to find out why Algebra was a bar to the progress of so many in our old school days and still may be a destroyer of school ambitions for so many today. As we study the situation in review there seems to be little, if any, justification in modern educational theory for the style of treatment accorded Algebra in most of the texts we teachers studied as children.

The four processes (addition, subtraction, multiplication and division) were treated in sequence separately and almost exhaustively. One might not learn to subtract the simplest possible statements until he had learned to add almost any complicated series or symbols the fancy could devise.

Let us take from an old text-book still used in many high schools a problem in addition that precedes *any* work in subtraction —

$$\begin{aligned} & m^5 + 3m^4n - 6m^3n + m^3n^2 + m^2n^2 - 5m^4n \\ & 7m^3n^2 + 4m^2n^2 - 3mn^4 \\ & - 2m^2n^3 - 3mn^4 + 4n^5 \\ & 2mn^4 + 2n^5 + 3m^5 \\ & - n^5 + 2m^5 + 7m^4n \end{aligned}$$

Does it not seem ridiculous that we should have been obliged to meet such an obstacle in the first two weeks of our introduction to algebra? What would we think of

a course in arithmetic that forbade our youngsters to subtract one from two until they had learned to add

$$\begin{array}{r} 536,115 \\ 7,430 \\ 234 \\ 300,022 \\ \hline 270,001 \end{array}$$

Yet this problem in arithmetical addition is almost an exact parallel of the one in algebraic addition we just considered which precedes *any* work in subtraction. Straight through our old texts and, indeed, through many texts still used in the opening year of high schools runs this same absurd treatment. We could duplicate this situation at the end of each fundamental process.

In factoring, why in the simplest examples in multiplication may not a boy reverse the process of multiplication and learn the first steps of factoring when the process may be more easily introduced? Instead, we find, before the pupil is allowed to attempt even the factoring of $x^2 + xy$, that most text-books of high school algebra require the solution of examples in multiplication and in division, each one of which could scarcely be worked out in half an hour.

So we could go from one chapter to the next of most Algebras finding that the author seemed to attempt almost to exhaust the possibilities of one topic before considering the first steps of the next. Enough has been given to emphasize our contention that it is fully as much (if not indeed far more) the *treatment* which has been followed rather than it is the difficulty of the subject of algebra that keeps many people from believing that any algebra can be taught below the years of high school grade.

Geometry. Taking geometry, next, we find a condition in many ways similar to that in algebra, yet not on the whole as complex. There does not seem to be a desire on the part of every author to tell quite the last word about the triangles, for example, before mentioning a quadrilateral, yet this is perhaps because we need to use quadrilaterals to understand more about triangles.

We find, however, that how "to erect a perpendicular at a given point in a straight line" was not planned to be taught until (in one text) the pupil had completed sixty-seven earlier propositions and had covered one hundred and five pages of the text including such difficult demonstrative theorems as:—"An angle formed by two secants, two tangents, or a tangent and a secant intersecting without the circumference, is measured by one half the difference of the intercepted arc."

Yet in theventional geometry taught for several years in the eighth grade of many elementary schools, our boys and girls have found no difficulty at all in learning to "construct perpendiculars." This construction problem our pupils have been in the habit of mastering about two years before they began geometry as a separate study and before they have learned, as many are expected to do in the *first* week of high school geometry:—"If two adjacent angles are supplements to each other, their exterior sides lie in the same straight line."

In high school geometry the difficulty of the work for the pupil appears to have been occasionally considered, *just barely* considered, but the logic of the arrangement is never lost sight of no matter into what educational absurdities it leads us. Much that may be easily comprehended by any normal pupil in his seventh year is hidden behind theorems so difficult as to stagger many boys in the second year of high school, boys *three years* more advanced.

Trigonometry. Trigonometry may seem to present insuperable difficulties and we need not take this topic farther than to agree that it is possible to give any eighth year boy an introductory idea of what trigonometry does, or what trigonometry is used for, without leading him beyond his mental depth. It is wholly a matter here of the introduction.

May we briefly summarize the situation thus far disclosed:

I. Our elementary school pupils' capabilities from the viewpoint of mathematics have been, on the whole, untried in other than one line — arithmetic of the conventional type. We know or may learn, that these pupils are now unable to make a reliable choice. We know further that these pupils will diverge later into three or four main groups — Academic, Scientific, Commercial, Industrial — that they will of necessity be called upon either to leave school or to select subjects of study in mathematics while knowing scarcely anything more than the name of these subjects and we have agreed that this situation is not a satisfactory one.

II. We have seen that the subjects of next mathematical concern have not been treated in most texts in a manner tending to make their introduction either simple, attractive, or even to the brightest pupils, rational. We may have been led to see that the first steps in accounting, algebra, geometry, are not so inherently difficult of and in themselves, but rather that it has been the total disregard of the principle "from the simple to the complex" as a beginner would understand it, that has made these subjects difficult.

For over six years at the Speyer School, we have been testing our theories in the class room. In each sub-division of general mathematics we have followed at Speyer

a modified spiral treatment with very marked success. Our unit is called Junior High School Mathematics. It covers most of the usual elementary school arithmetic with some omissions and some additions to bring it down to the arithmetic of today. At the same time our pupils begin a study of the other mathematical subjects which more or less parallel the work of arithmetic.

In order that all the work in mathematics may be interrelated, we have but one teacher for a unit course. The same teacher gives instruction daily in mathematics to the same classes, regardless of the *topics* studied.

Only by such a plan—*one teacher for all topics*—can the course we are following be well administered. The relative success of the various pupils in the topics covered can only be appreciated by one whose instruction covers the whole field.

In introductory *Accounting* we cover in our junior high school work much of the usual seventh year elementary work. Some of the examples and problems usually found in the seventh year, however, we postpone until the eighth and ninth school years. Some of the topics formerly studied in the eighth and ninth school years we place for the first treatment (in simple form) earlier in the course.

In *Algebra* we make a beginning so gradual that the student of arithmetic scarcely knows where his arithmetic left off and his algebra began. We give arithmetical values to algebraic symbols and review our arithmetics as our algebra advances. We attempt to approach algebra through the simplest formulae for which symbols are used and by well graded problems make each step both rational and easy. We endeavor to teach the earlier algebra (if not all of this subject) from the viewpoint of possible use or at least in a way to forecast its possible use to those who are to go farther.

We endeavor to see that the algebra of our junior high school never becomes so enamoured of its abstractions that possible applications in actual scientific practice can be at any time overlooked.

A knowledge of Geometry (as of algebra) becomes a part of the pupil's intellectual equipment by a gradual process of infiltration, rather than as of old, by a direct frontal attack in force.

Some time when the pupil is studying arithmetic the work is turned into a study of dimensions — as it is in the elementary school course, but with this difference that in the junior high school it becomes a point of departure into new fields, though the pupil for weeks may not realize it. Studies in square measure and in cubic measure lead to problems of construction involving the compass, ruler and, possibly, the protractor. From a study of measured lines and distances, the pupil advances to a study of the relation lines without measurements in feet and inches.

Accompanying this work, or preceding it, in some instances, comes a study of geometrical construction. Indeed we will all be inclined to agree that demonstrative geometry should follow, rather than precede, con-

NOTE. As a teacher of high school physics I found that for years pupils who had "passed the Regents in Algebra" were still as helpless as babes before such a simple statement as "power times power distance equals weight times weight distance" when expressed by symbols in: $P \times PD = W \times WD$.

As for the relations between volume and pressure in gases the pupils were simply floored by the formulas:

$$V \propto \frac{1}{P}$$

$$V \times P = C$$

$$\frac{V}{V^1} = \frac{P^1}{P}$$

Each year in the work in physics I spent, in the aggregate, two weeks teaching the most rudimentary applied algebra to a class that had passed in "Algebra through quadratics."

structive andventional work, but at no point do we divorce the earliest steps in geometry from the arithmetic that is being studied with it, so that we have no separate conventional geometry. In geometry, as in accounting and algebra, we favor a modified spiral treatment, planning to review at least once, practically all the topics taken up the first semester of study, carrying those topics that need farther treatment so far as practicable to the same degree of difficulty as now prescribed for high school students. However, nowhere in our first semester's work do we entirely lose contact for any length of time with the possible application of geometry in problems of measurement and construction. The problems, graded in difficulty, accompany many propositions, or in some cases, precede them, so that each proposition and its problems are integral parts of what may be a very simple yet very real engineering project.

Without committing ourselves too far to the recapitulation theory, we are at least sure that the teaching of geometry is immensely enhanced by studying, as we advance, the historical development of the common use of geometry in the field of engineering. At the end of our junior high school study of geometry, the straight demonstrative geometry predominates, having been introduced gradually, month by month. But in our junior high school mathematics we do not attempt more than half, possibly not more than one-third of the propositions of the so-called Harvard list.

III. The arrangement of the various sub-topics of our General Introductory Mathematics is an important, but not yet a settled problem. There are many reasons, chiefly the reason of difficulty of subject-matter, that suggest a parallel treatment as advisable, so for a while we alternate introductory algebra and geometry and each is taught in connection with the work in arithmetic.

A series of diagrams may best show the three approximate divisions of the five weekly recitations that we have tried.

	First Year		Second Year		Third Year	
	7A	7B	8A	8B	9A	9B
I.	Arith. 5	Geom. 5	Alg. 5	Acct. 5	Alg. 5	Geom. 5
II.	Arith. 3.....	Geom. 2.....	Acct. 2.....	Alg. 3.....	Accounting or Algebra or Geometry } 5	
III.	Arith. 3.....	Geom. 2.....	Acct. 2.....	Alg. 3.....	Commercial Acct. 5.....	Academic Geom. 5 | Alg. 5

After trying all these combinations, the one designated as III seems to be the best fitted to meet our needs, it being remembered that the division of the five weekly recitation periods indicates the relative daily emphasis, rather than any sharp day by day differentiation of the introductory work into wholly separate types of work called by separate names.

EXAMINATIONS AND CREDIT

Experiments have shown that our brighter pupils can (and do) at Speyer School cover all the required work in arithmetic and one half year's work in algebra and one half year's work in geometry by the completion of their ninth school year. We then send these pupils to

the senior high school where they sustain themselves in second term algebra and second term geometry quite as well as their fellows from the first year old style high school course.

As a result of polling our second year classes, we have found to our surprise that easily the best liked subject, voted so even by some who failed, was Introductory Mathematics. We consider such a vote evidence that the kind of introductory mathematics just described is not the bug-bear some would have us think.

However, though a high percentage of our boys later pass the uniform New York State Regents in algebra and geometry, they do not, it must be admitted, enter these examinations on quite an equal footing with those who have taken the old time college entrance courses as given in the senior high school. There are some examples, possibly some topics, that they find very difficult — and yet there are a great number of things they know how to do with algebra and geometry that the average high school pupil does not know how to do. This skill, previous uniform New York State examinations have not undertaken to test.

Experiment and experience only will prove whether our Speyer boys who go on to college will use their elementary algebra or geometry to better advantage in the higher mathematics they may later elect, but we all will be inclined to grant that the pupil who goes no further than high school has positively gained something more unquestionably worth while from our special course than he would gain from a study confined to college preparatory algebra under the old intensive plan.

Our two most progressive New York City boys' high schools — Stuyvesant (Scientific-Technical) and DeWitt Clinton (General-Academic) have already put into oper-

ation a first high school (ninth school) year of mathematics which serves as an introduction to the whole field of advanced work in algebra, geometry and trigonometry. Into such a course our pupils naturally pass easily and with full credit. The tendency in secondary school mathematics appears to be wholly toward the introductory course in mathematics which we have been following at Speyer School.

Naturally, believing in our work, we are anxious to see modifications in our second year high school work that will permit us to show wherein our pupils excel those who follow the older course, including such problems as involve the reading of graphs or the solving of formulas.

In a word as a result of study and experiment, we have become convinced:—

1. That much in mathematics that has been considered too difficult for students of junior high schools has been made so by its old style treatment.
2. That there is much in accounting, geometry, algebra and trigonometry that is no harder than some of the arithmetic formerly prescribed for the seventh and eighth years.
3. That a modified spiral treatment such as we are trying, with sequence still open to experiment, is decidedly worth while.
4. That we should omit to a large degree, if not wholly, work that seems to have won a place simply because it was hard and substitute for some of this, work that is of real value in other lines of scientific endeavor.
5. That, while we are experimenting, some options should be given the junior high school to gain college entrance credits for work that is at least of as great, if not indeed of far greater value than that in which high

school pupils are (or have been until recently) tested by uniform college entrance examinations.

QUESTIONS

1. What difficulties usually attend the pupil's selection of courses in senior high school mathematics?
2. To what extent is the pupil's difficulty in doing creditable work in senior high school mathematics due to the inherent difficulty of the subject and to what extent to the customary method of its presentation?
3. Enlarge upon the difficulties that depend more upon method than upon subject-matter in accounting, algebra, geometry, trigonometry?
4. Outline a plan for carrying General Introductory Mathematics as a unified two year course with a separation of courses for the third year.
5. Why is it necessary to have one and the same teacher cover all the subdivisions of the mathematical field for each separate class of junior high school pupils?
6. What advantages may such a general introductory course give its pupils over the old sequence of subjects in mathematics?

CHAPTER VIII

INTRODUCTORY FOREIGN LANGUAGE

No experimental school whether elementary, secondary or of college rank can be wholly free to test out theories that, so far at least as the premises are concerned, may seem worthy.

For an experimental junior high school the field is twice limited because whatever liberties we may take with the methods of instruction, we are still confined to such subject-matter as the senior high schools and the colleges demand. Not until we have an entire school sequence from kindergarten to university that is free from outside dictation can many worth-while theories be given a fair trial.

Of no group of subjects is this more true than of the so-called Foreign Language Group — whether they be “dead” languages like Greek and Latin, or “modern” languages like French, German and Spanish.

The one great experiment awaiting trial is the experiment of sending a group of pupils through high school and college with no training in Foreign Language at all. This proposal is not, as may seem, an attack on all foreign language study, but rather a proposal to get down to some sound basis for evaluating foreign language work.

If two groups of one hundred pupils as near alike in native ability as psychological tests could estimate them, were started in the junior high school at the same time

toward that distant goal, college graduation, along two separate paths—the one taking Greek or Latin and French or German or Spanish (two foreign languages at least) and the other taking no foreign languages at all, we might after ten years, or perhaps earlier, have at least some slight objective basis for measuring the comparative educational value of the two types of work.

To be still more worthy of acceptance, our data should be checked up some ten years later still by the successes or failures which marked the careers of our two hundred pupils when they were settled in their life work.

Having no such experiment as a present probability, we are left almost wholly at sea in the matter of evaluating foreign language study, especially the value of such study when it receives no conscious use other than that of permitting college entrance and helping to secure a college or university degree.

There was a time when the study of a foreign language, especially the study of Latin marked a man as "educated" and a probable leader. To a certain extent there is still more or less social deference paid the man who has passed through six or eight years of Latin and five or six years of Greek.

However, as in these later days, more and more men of national prominence and great national service reach such heights without the help of the classics, the position claimed for language as a *sine qua non* in higher education has been greatly weakened. With the modern emphasis on what a man can do rather than on what he has studied, even the social distinction conferred by a study of "the classics" has been lessened, though by no means obliterated.

Latin has, however, furnished and may still furnish, one wholly undebatable service in weeding out those

would-be students who have no stomach for disagreeable tasks. If one of our best engineering colleges once required Latin for admission (though it never teaches a word of Latin in its halls) it may have done so because those who have studied Latin have given some indication of being hard-working students. The boy who has "passed" in Cicero's *Orations* and Virgil's *Aeneid* may be truly considered as showing some promise of being able to enter upon the equally difficult studies of the engineer.

It may, however, happen in the not far distant future that even this ultra conservative school of engineering will find the modern tests for general intelligence a better means of selecting its future pupils than by the eliminating power of Latin which it so recently employed.

However, in our present conception of the duties of our free schools and colleges there has been a great change from the conceptions held even a generation ago.

Once, we were to select and train leaders. Those who failed were given scant consideration. The failing pupils merely classified themselves as those unfitted for the higher fields of learning.

Today we are coming to believe that it is the duty of our free high schools and even of our colleges to provide profitable instruction for all who have the time, money and ambition to continue their education whatever be the mental make-up of the applicants.

Once *pupils* failed if they found the work too difficult. Today *schools* fail if they propose work which their pupils cannot do. More and more the conviction is spreading that society is morally and economically bound to offer education to each growing youth according to his youthful capacity, just as society expects to draw service from each mature man according to his mature strength.

If the earlier centuries were chiefly concerned with the higher education of their leaders, this century is chiefly concerned with the higher education of its masses. However, it remains for the educational leaders of this generation and the next to discover ways and means of providing education for each according to his capacity.

The error we seem to be making is that of supposing that the subjects of study once used to select and train leaders are still the subjects which must be studied by all who would prolong their education beyond the grammar school period.

All this is particularly pertinent in any discussion of foreign language study. Greek and Latin may still be studied with profit it may develop, but Greek and Latin may no longer be employed chiefly, if not solely, as a barrier to the higher education of those who cannot survive such tests as these foreign languages may offer. Pupils may still be kept from promotion in Greek and Latin if they evince no ability to learn these languages, but only from promotion in Greek and Latin not from **ALL** promotion as heretofore.

The necessity of abandoning the use of Latin and Greek for their selective value becomes more and more recognized by students of education who have found that men have achieved marked success in other lines who were practically devoid of any "language sense" capable of even average development.

More and more it is being disclosed that an inability to learn a "dead" language is not of and by itself any significant barrier to marked success in other unrelated lines of endeavor.

The same situation exists when we consider the study of modern languages, though these studies may never be consciously employed as barriers to all educational

advancement in the same way that the "dead" languages have been.

So far as foreign languages in the junior high school are concerned, we must, before we decide to teach them at all, make up our minds that if we teach them they must be suited to the capacities of our pupils and fed to them only at the rate at which each pupil may masticate and absorb them without danger of mental indigestion.

And now having gotten this far, we come face to face with an unavoidable compulsion. *We must teach foreign languages in the junior high school because the senior high school (in turn dominated by the college) requires it.* Even if we were convinced that foreign language study were less profitable than other work that might replace it, we would be causing our pupils to suffer a still greater loss if we refused to give them work in a foreign language as one of the passports required for continuing their education.

The time may come when our American colleges will accept the position so strongly taken by one of our foremost professors of Modern Language, Dr. Calvin Thomas of Columbia University. Only a short time before his death, Professor Thomas contributed an article to a round table discussion on Why Pupils Should Study Foreign Language. Most of the professors concerned themselves with arguments for the study of their specialty. Professor Thomas, however, said in effect, "Why should a pupil study a foreign language? Ask the pupil himself to get the answer. Test his answer and make sure he can uphold his position. Too many boys and men are studying foreign languages because of misconceptions, or because it may be the style. The one valid argument for admitting a young man to the study of a foreign

language is evidence that he will *use the language* after he leaves college because he needs it to secure certain definite and worthy aims."

The time may come, and many believe it must come, when youths in the junior high school will be brought before the court to show cause why they should be permitted to attempt the study of a foreign language through the *use* they will make of it *as a language* and not as a ticket of admission to the senior high school or to the college.

However, until all college professors take this point of view, we in the junior high school must consider that we have no escape, even did we desire it, from the necessity of providing foreign language instruction for at least such of our pupils as show promise or even show purpose of entering higher institutions of learning.

Surely if a foreign language is to be taught at all the junior high school is the place to begin it. It has long been known that children learn the intricacies of a foreign spoken tongue far more easily than do adults, just as it is equally a matter of experience that most adults learning a new language are frequently unable to speak it without a brogue or accent, however perfectly they may learn to write it.

From this situation which we might call a language axiom we can gain some idea of the approach which we should select for the modern languages at least. Since childhood is the one best time for beginning the study of a new language, the earlier we begin that work in our junior high school the better it will be for our pupils' ultimate success.

However, having a second time reached a point of agreement upon what is educationally reasonable, we are again confronted with a condition that may force us

to abandon that which is reasonable in theory to accept perforce that which is reasonable under existing conditions.

An experiment worked out at Speyer School from 1916 to 1918 will illustrate this point.

All things being considered, it was decided that since practically all pupils who would continue their education must sooner or later have some foreign language, the study of *Latin*, as a basic tongue for much of English and the Romance languages, might well be undertaken first. It was further decided that all our pupils should first study the new language as a child learning the language should study it, by the natural or direct method, rather than from the artificial approach through grammar rules so largely followed by adults in the higher schools.

Consequently there was planned a course in Latin which began in the first junior high school year by using Latin as a spoken language and adding only such rudimentary grammar as might be unavoidable. The teacher and the boys used only Latin as a means of conversation in the class room, not because this in itself was valuable, but as a device to add interest. They learned to read and write Latin (simple Latin of course) much in the way they had learned to read and write their own English tongue, without much realization of the rules of grammar, certainly with little of the point of view which considers Latin as ALL grammar.

In the class room among other things attempted great emphasis was laid upon the English words with Latin ancestry and no new Latin word was taken up without a search for possible English descendants. Taking, for example, the Latin *SCRIBO*—I write, the pupils were required to bring in lists of English words that had been derived from some form of this verb's Latin root, as

scribe, inscribe, script, conscript, conscription, etc., etc. In this way the Latin was made to contribute most decidedly to a better English vocabulary and the boys were learning more about English while studying Latin. Gradually more and more Latin grammar was introduced until a fair grammatical understanding was thought to have been secured. Finally the boys were promoted to the tenth school year, or second high school year, in an old time four year high school.

It was then that trouble began. Our boys were at once reported as being wholly unable to do the work in Latin required in the senior high school. They were not only failures, but worse than failures, because they had a totally wrong point of view. These boys insisted upon considering Latin as something natural to be spoken, read, or written as a living language, instead of regarding it as an intricate puzzle to be worked out and accounted for grammatically word by word. The boys in turn complained that their teachers cared little or nothing about the content of what was written or read, but only about the reasons *in the grammar* justifying the use of a certain word in a certain sentence according to its gender, number and case, if a noun, or its voice, mood, tense, person and number if a verb.

Naturally two such opposing points of view could not endure in the same class room and naturally our Speyer boys had to begin Latin all over again, or else join special coaching classes designated to eradicate their earlier notions of Latin study.

It has never been settled to our own satisfaction whether or not this natural and direct approach to Latin would in the end — were it continued for three years more — make better or poorer students of Latin and of English than does the established plan. We have, how-

ever, been unquestionably convinced that under present conditions a direct method approach to old time Latin instruction is an almost impossible undertaking.

Returning once more to the study of the theory, there is much to be said for Latin as the introductory language for the junior high school. In addition to its possible use as Latin, it may have a marked influence upon the pupils' written and spoken English. The very use of a Latin vocabulary involves a considerable study of English synonyms and leads a pupil to be more careful in his use of English words in writing or speaking to convey that certain thought or shade of meaning that he has in his mind. Latin will help him frequently also to find the true meaning of an English word about which he is in doubt. Therefore because of its general possibilities as a help to English writing, reading and speaking, as a help to the later possible study of French, Italian or Spanish, as a help to the understanding of technical terms in the professions and last but not least, as a very practical help in college entrance, we may decide that Latin is our best introductory language for junior high school work.

However, even here we again meet practical obstacles that may again keep us from what we believe is best, because we must adjust ourselves to conditions as we find them.

In the first place as we have seen, the approach to Latin must be the old formal grammatical, artificial approach which is least well suited to our junior high school pupils' age. In the second place, because we are a *junior* high school and our teachers as yet are generally paid less than *senior* high school teachers, we may find (as many have found) that we cannot secure teachers of Latin sufficiently well qualified to undertake this work.

Teachers of Latin, skilled teachers, are apt to be attracted only to senior high school, or college, work, though if ever skill in Latin teaching is needed, it is needed in teaching beginning Latin. No other subject seems so much affected by the first year's work.

So it may be, despite our decision that introductory Latin would be desirable — especially a modified English-Latin — as an introduction to foreign language study, we may nevertheless have to abandon its employment until the situation of methods and salaries has grown more favorable.

We may then have to make our selection, since we seem forced to select some foreign language, from French, German, Italian and Spanish, with the probability that not more than one in a hundred of our pupils will use any one of these living languages except to gain high school graduation or a college degree.

Our choice of a modern foreign language then may have to be made upon the best basis possible — even where some of our reasons may seem to be (and may really be) indefensible upon truly educational grounds.

Taking our pupils as a whole we may find it best to select that one foreign language that promises to serve them best by its use in one of the following ways:

- (1) As a probable aid to their material business or professional success.
- (2) As a ticket of admission to high school and college.
- (3) As a means (under a well-trained teacher) of learning how a foreign language should be studied.
- (4) As a source of individual culture and refinement.
- (5) As an introduction to a people that it would be well to know and appreciate more intimately.
- (6) As an introduction to a literature that might well be read and enjoyed in the original.

Each school considering its own school population, its pupils' probable occupations, its senior high school limitations, will have to make its own decision. Yet nothing seems more essential than that each junior high school (unless it have at least a thousand pupils) decides upon ONE language that on the whole, best meets the six possible uses we have enumerated.

If we are to allow one class to learn Latin, one German, and one French, we are, as we shall speedily see, soon to run into a tangle that will make it in every way worse for a pupil to study a language of his own selection, rather than one we might have chosen for him.

If our pupils are separated into small groups, each taking a different language, we shall be apt to find that the usual removals from town and the sudden calls to employment that cut the class numbers down as the grades advance, will soon result in a class too small to permit us to employ a teacher to instruct it. Equally serious will be the influence of small language groups upon our entire school plan of homogeneous speed-grouping, planned to advance each pupil according to his ability, for our speed-group plan fails if we must put into one foreign language class the speediest with the slowest. Finally, if we are allowed to have but one teacher for each language, or one for two languages, all language instruction must wholly stop if that one teacher is ill or called away.

On the other hand, everything planned for the general good of the pupils of our school is better secured if we maintain a unified department of foreign language—one language and one only.

The pupil may now be placed with a speed-group that enables him to work and study with markedly better results. He may help create an atmosphere in the school,

in which he and his fellows may learn the new language more pleasurabley. He may find opportunities for using his new language in the school increased in proportion to the number of his fellows that are studying it. He may find his own daily schedule of work made more suitable by being able to recite in foreign language at a time when it is most suited to his personal program, rather than at a time which must be suited to the program of his one language teacher. He may, finally, be sure that he will be able to pursue his language study for the course without fear of being forced to drop it toward the end because his class may have become too small to warrant a teacher's assignment.

It is not our purpose here to select, or even to recommend, any one foreign language for junior high school study, unless that one language be Latin taught as it may yet be taught for its use in English as well as for its own peculiar ends.

However, from our experimental study at Speyer School, we have arrived at some conclusions that may be pertinent here, even though we may not say these conclusions are inevitable in other situations.

To begin with, the best introduction to the study of a foreign language appears to be six months of study about the people who use the language — how they live and how their ancestors lived — rather than by a direct beginning upon the language itself. Men and women who have specialized in the study of teaching English literature tell us that the one most vital step in the good teaching of literature is to secure the proper *mood* or *setting* for the masterpiece before ever a word of it is read. Equally, the most advanced students of human psychology tell us that our physical actions and the functions of our bodily organs are tremendously affected

by our state of mind. If we are greatly angered, certain chemicals are poured into our blood to increase our physical power of resistance far above normal, blood flows from the brain to the muscles, certain organs almost stop work and others work at double speed. All these things are nature's way to prepare us to survive in the struggle that formerly, at least, was an accompaniment of anger. When angry we may at least strike harder even if we may not think as well. Equally, in other emotional states, there is an inevitable bodily preparation for the situation that once, for age after age, accompanied, or shortly followed, each particular emotion.

Certain it is that a predisposition to like a new subject of study, once both emotionally and rationally secured, appears to carry the beginner into the new subject and over its difficulties with a spirit of achievement and a determination to succeed that gives the one with such a predisposition an enormous advantage over one not so predisposed.

Thus it may be found in a study of a new language that it is more often important to begin *well* than to begin *soon*. Given four years of work to be done by adolescents in a new field, some will be found who believe that in the end a greater total accomplishment may be secured by spending no insignificant fraction of the four years in first establishing an intellectual and emotional *predisposition to like the work* that is to be done. If we accept this basis temporarily for our junior high school work, the first six months of any language study may well be spent upon a daily study of the people who speak the language, their home country, its history and its geography. Its government past and present will be considered, though not too formally. Especially will its

national heroes and heroines receive attention as even will its legends, myths and superstitions. Though perhaps in no formal and scholarly way, our pupils may yet be led to enter and become in imagination a part of the life of the country whose language they are to learn — to know what its people think of themselves and of their neighbors — to know what its children study in school or play at in their free time. Finally, our pupils may be led to read in translation some of the master-pieces of this nation's best authors.

All this precedes any formal study of the language itself, though it does not end by any means when the formal study begins. The advantage that the junior high school has over all other schools where language is studied lies in the fact that we have time to make this leisurely beginning when others must rush ahead to cover the number of pages of text or grammar that the authorities prescribe.

In our junior high school the study of the language as a language will follow several months of this gradual social introduction and will, if a modern language, of course, be the direct or natural method — not the grammatical. Later, as the need for grammar becomes more and more appreciated, it will become more and more prominent, but not until the pupils can speak to each other in the new tongue with considerable accuracy of pronunciation and some fluency upon simple matters near at hand, will the emphasis upon grammar become what our senior high school friends might consider normal. Thus the junior high school course fits itself to conventional procedure.

So much depends, however, upon the teacher who employs this method and her own skill and tact in using it that we may still consider this approach as in the ex-

perimental stage. It does not inevitably secure good results in all hands — no more for that, does any method new or old. Yet in the hands of a genuinely skillful teacher the possibilities of this approach are truly marvelous.

It may not be aside from the point to consider in closing certain abilities especially desirable in a junior high school teacher in Foreign Language. In addition to the ability needed for the introductory months we have considered, there are other abilities greatly in demand to meet our newer junior high school aims and purposes. Especially do these newer abilities need emphasis in the colleges or normal schools where our teachers of foreign languages are trained.

As a first ability, or capacity, that needs training, we may consider the ability or capacity to discover, or to invent ways and means of furnishing the pupil with an opportunity to use in an English-speaking community his knowledge of the foreign language he studies, great or small as that knowledge may be. This ability appears rarely to be sufficiently emphasized as valuable in a teacher of foreign languages. In most schools the use of the language seems to be almost wholly limited to the school period in which it is taught, though some senior schools form language clubs, publish language papers, correspond with children of the country whose tongue they study and even stage modern language plays. Yet all this is often regarded as something not only extra-curricular, but exotic or artificial. It is almost never considered a requirement. Teachers who now undertake this work must still do so on their own initiative and at their own expense of money and free time. Are we therefore unreasonable in expecting that school systems, as well as those who are preparing to

teach a foreign language, will be led from the start to regard as an essential part of all modern language work the making provision not only for learning the language, but for using it? Indeed, is it unreasonable to expect that some provision * for the use of the language might well be made a prerequisite for its being taught at all? If more college professors, superintendents, principals and teachers were trained merely to accept this viewpoint, still much good would have been accomplished.

* A few suggestions as to ways of keeping up the study of the language that is being learned, supplied by Miss Denver of Speyer School.

1. Subscriptions to a magazine or newspaper printed in the foreign language.
2. Attendance at theatres, churches, or social gatherings, where foreign idiom may be heard.
3. A definite daily period of conscious thinking in the foreign language.
4. The possession of a complete set of books used in studying the language. The loss of the books "loaned" by the school is often the first break in any continued interest in subjects in the high school.
5. The teaching of the language to some other person.
6. The reading of short articles, poems or news items which are to be reproduced in writing.
7. The habit of using the foreign tongue in connection with some particular activity, or person, or phase of life; for instance, the keeping of a diary, the keeping of one's personal expense account, etc. (I knew of a German who had retained an amazing amount of English after years of life in China and claimed to have done it by holding long conversations in English with his dog!)
8. A system of rapid mental drills — checking up on vocabulary, translation of sentences taken at random from general conversation, rapid sight translation of items of interest (all words not known or new words and technical expressions to be looked up and noted carefully.)
9. Correspondence with a native of the country whose language has been studied.

As a second desirable, though but slightly emphasized, ability in the training of modern language teachers, we might name the ability to show language relations—the ability to connect the language with the earlier tongues from which in part it was derived—and with the modern English to which it may contribute.

Is it unreasonable to expect the pupil who is studying his new vocabulary to tell both the Latin ancestors and the English descendants of the word he studies—this not so much perhaps for the sake of the foreign language as for the sake of the pupil's general cultural training?

Is it unreasonable in us to expect that even the beginner's book will, in its simple vocabulary, call some attention by its type arrangement to the common ancestry of the foreign and the English words? If it did this, would it not be a better book than the one which did not? In default of such a text may not the teacher be expected to supply the deficiency? Not that we would introduce the study of comparative philology into elementary work in foreign language, but that we would never pass over without mention foreign words that have sons or cousins in English without plainly calling attention to this relationship when the foreign word was met with for the first time.

The third of these newer abilities, or capacities, that we might like to see made a serious aim, is an ability on the part of the teacher of foreign language to forecast with a considerable degree of accuracy the probable success or failure of the pupils in his class. The psychologists are working out prognostic tests with a high degree of probability for general school success. The next few years may witness, as we are witnessing, the publication of prognostic tests in modern languages that may prove of equal value. While these tests are in the making

it seems reasonable to expect that every modern language teacher should have his eyes constantly open for language situations that will be of prognostic value. Other things being equal, the teacher who is trained to work along this line will be a better teacher than the one without such training.

As a corollary of this should come the right of a teacher, trained as we have indicated, to debar from a further study of foreign language those who show undoubted signs of approaching inevitable failure. Our Speyer records show that all the pupils who fail in our introductory work in foreign language, but who insist upon repeating their work in senior high school, fail again as lamentably as ever. Could we but direct to other subjects those who have no hope of ultimate success we could save both pupils and teachers many hours of wasted effort. Naturally the power to select must come before the power to debar. However, when one is established, the other will not long be withheld.

In the meantime, let us all, teachers of foreign languages included, hasten the day when the colleges will recognize that young men and women may still be desirable student material even if they show an entire inability to pursue with reasonable hope of success the study of any foreign language.

QUESTIONS

1. What is the one great experiment in Foreign Language still awaiting trial and why cannot it be tried now?
2. What educational service (aside from information and culture) has Latin furnished?
3. What change of view as to the success and failure of pupils characterizes the modern high school?
4. What arguments can I advance against using Foreign Language for its selective value?

5. Why must Foreign Language be taught at all?
6. What are the chief arguments for and against the adoption of Latin as the introductory foreign language for a junior high school?
7. What qualifications should our introductory foreign language possess.
8. Why should a junior high school attempt but one foreign language?
9. What form of introduction to foreign language study would I propose and why?
10. What newer abilities may we expect the junior high school teacher of foreign language to possess?

CHAPTER IX

GENERAL INTRODUCTORY SCIENCE

When any new subject of instruction applies for admission to the high school curriculum, it is at once the object of attack from the proponents of all the subjects that may possibly suffer exclusion if the new subject is granted admission.

General Science, though in some communities still fighting for recognition, may be considered on the whole as having gained a place in the junior high school instruction, though it still holds that place under the fire of criticism from sympathizers of the subjects that have yielded ground.

It is far better for us not to consider whether General Science is better than Latin, or Greek, or Ancient History, but rather to consider whether the training and information given by Science is so valuable that we cannot possibly omit it from our program of studies.

We are told that each pioneer American home a century or more ago was almost completely a community in itself. Not only did the father of the family build his own home, plough, plant and cultivate his own fields, but he gathered and disposed of his own harvest. Beside this he doctored his own stock for their ailments, made or mended his own harness and wagons, built his own roads, cut, hauled and split his own lumber or firewood.

Similarly, the mother of the family, not only prepared

for the members of her household the food which nourished them, but she also wove their linen or wool, made their clothing and even doctored the children when they were ill.

With the increase in our American population and the improvement in our methods of transportation and communication, the isolation of the pioneer family was greatly lessened. It became more and more possible for the family to cease being an independent community in itself and instead, a more or less necessary part of a larger group in a village or town. The family no longer was obliged to supply all its wants from within its own circle, but by the exchange of labor and commodities could specialize on that community demand which it was best able to supply. Gradually it became possible for a group of men living in one American town or city to supply a larger and larger territory with the one manufactured article it labored upon, until now the whole nation may be reached by the products of some one small specialist group.

In the same way it became possible for a man to specialize in not only one field of learning or of trade, but finally to specialize in one tiny fraction of that already greatly limited field, so that in the extreme today we have surgeons that perform one special operation and lawyers who undertake but one special kind of case, as well as artisans who tighten but one bolt or stitch but one set of threads. So in America we gradually, by the greater knowledge and skill of the specialist have come to a division of labor that makes it more and more necessary that a man become expert in doing some one thing and, possibly, as in some kinds of factory work, doing but the one thing over and over again year in and year out for all his working life.

Whether or not this extreme division of labor has made on the whole for human happiness may be questioned by some philosophers, but no one will dispute the fact that to the advances in physical, chemical and biological science this truly wonderful transformation is almost wholly due.

So it might seem that a study of the forces that have made this economic and social change possible could claim some consideration in any school curriculum. And yet there are still many that will claim in this age of specialization that while it may be desirable that some men become specialists in the various fields of science, still for the rank and file there is no need for requiring even elementary general science instruction. The leaders in science, these objectors say, must be college or university trained men, so let our schoolboy stick to the old and tried curriculum of his fathers, during his pre-college years—there will be time enough for him to study science when he reaches college if ever his education goes that far.

Whatever be our bias for science instruction, we cannot entirely pass over the valid points in the criticisms that have been raised. Is it necessary that we all know something of science, let us ask ourselves, when we can so easily buy or hire the products of science to get the results we want?

For example, is it really necessary to our mental equipment that we understand the principle of the telegraph when all we need to know to send a telegram is be able to write our message and to pay for its transmission. To be sure, every normal boy is enthusiastic about the possibility of electrical experimentation; he gets a genuine joy from his home-made telegraph instrument and more and more he is taking up “wireless” for the fun

of it. Yet after all, is this "Study"? Will it help him to do better the things he must do anyway? The answer is by no means beyond the possibility of being questioned, whichever way we may cast our vote.

However, there is another wholly different angle from which to approach the study of science. It is claimed that to the extent that every man, woman and child in the nation knows something of the how, the why and the wherefore of scientific processes he or she employs, to that extent the nation is better prepared for happiness and prosperity in times of peace and self defense in time of war.

These proponents of science tell us that it is the emergency, testing our fitness to survive, which gives us a better judgment of the relative value of the things we ought to know. To be sure, the unusual demands of a great war in which even the children in the home were to an extent participants may give us temporarily an artificial set of standards and yet it may also give us a truer vision of the things that are permanently worth while.

When all the available labor of our nation was so recently required for the essential industries and when it was considered the height of selfishness to demand private and personal service of those whose efforts applied elsewhere might help win the war, many a man and woman suffered in countless minor and often in some major ways because he or she had not the knowledge of some homely matters that even the study of elementary science might have supplied.

Can it be that with the introduction of general science to the school curriculum we are marking the beginning of a new industrial epoch in which, though ever so slowly, the pendulum is starting to swing back toward a

greater independence of the home from the service of the hired specialist? Not that we may ever become in any home a world unto ourselves, but that we shall learn to use in our homes the products of science, the machines and inventions that science supplies, more as masters and less as ignorant operators.

To be sure there will always be men whose services in one special field will be so great that they will better serve their day and generation by putting all their energy and time upon this single specialty, but for the general run of mortals with no such preeminent abilities, may not a greater freedom from the necessity of calling upon the special knowledge of the outsider make us generally more happy and more efficient.

Has not the division of labor both real and artificial been carried to an extent that may cripple us as individuals and as a nation? As an example, recently a friend of mine had in his cellar a leaky iron water pipe that troubled him and he called a plumber to mend it. When the job was done my friend found that the drip from the water pipe had rusted a small hole in the similar iron steam pipe underneath. When my friend asked the plumber to mend that also, the plumber indignantly and persistently refused. To mend a steam pipe, it appeared, was a steamfitter's job and the plumber who touched a steam pipe might find himself unable to get employment in the entire city.

Another friend employed, to repair the brick cornices of his house, a brick-layer, who in the course of his work discovered one loosened slate which he was unwilling to fasten by a single nail because that was a roofer's job and not his special trade.

Even as a last example of artificial specialization, a paper hanger that I knew had to paint the front of his

own little shop at midnight lest he be discovered working at another's trade.

A study of the employment conditions in a great city may, or may not, convince us that this super-specialization of artisans is a necessary and altogether justifiable procedure, but it has served its purpose here as an illustration of the situation that sooner or later seems bound to confront us all, not simply in the field of the skilled trades, but in our every day life at home or in our special occupations. For the average man today in his average American home, whether he rent or own it, the degree of helplessness and dependency which he experiences even in little things seems almost to have reached the maximum.

Americans as a national group, whatever be their racial origin, were once credited with an adaptability, an ability to take care of themselves and an ability to invent new and better ways of doing things that older national groups did not possess. Yet today, aside from our conspicuous examples of specialist inventors, as a nation we could scarcely merit any special commendation in the field in which we once excelled.

Our crass ignorance, if not of the *HOW* at least of the *WHY* of things that science daily does for us is, many claim, at the bottom of our patent helplessness. We speak and read and write our common native language, but we have in our division of labor permitted a group of men to grow up in our midst speaking a language which we do not understand. The engineers in science bring us our water, take away our waste, supply us with light and heat, transportation and communication, without all of which we feel we would not greatly care to survive, and yet in our schools we teach little or nothing about the work of the men who make these services possible.

We take for granted all that is supplied and complain that more is not furnished. At the same time we make in our schools little or no provision for supplying a constantly improving type of science instruction, in order that future generations may advance as much beyond our own in creature comforts as we have advanced over the generation that is passing away.

We even trust to our popular magazines to tell us in diluted language the way to care for our own body — its diet and its regimen. If we are ill, we call the specialist who endeavors to correct in a few weeks the results, possibly, of years of ignorant and harmful living.

Everywhere we let our homes, our household equipment and, most of all, our own bodies suffer needless loss and waste through our own ignorance, and then call upon the specialist, be he carpenter, dentist or physician, to help cure an entirely preventable situation.

Any subject or subjects that gave promise of making us as a nation or as individuals better able to live more useful and more happy lives would deserve consideration.

If science makes that promise real then science should be and must be studied in school no matter what other subjects have to lose thereby.

However, we want to make sure that what we study will be of value to us, not primarily to make us scientists, but to make us able to use science to help our daily living. One difficulty with science instruction in the past seems to have been the emphasis laid upon what the scientist himself considered fundamentals, but which were without significance to the man on the street. In chemistry, the most difficult abstractions, theories and laws were proposed for the first semester's study. In the elementary grades, physical science often began with a discussion of the law of levers, or the determination

of specific gravity. In a study of the human body — supposedly studied as a guide to hygienic living — the pupil often began with a study of the bones of the skull. And so through all the proposed subjects of instruction in science ran the super-emphasis on what the scientist himself considered basic and fundamental knowledge for an embryo scientist, rather than upon such common information as the salesman, the shop keeper, the farmer, or the skilled laborer might find worth while.

If our present point of view is the correct one, we must banish the science text-books of the recent past and begin to work out a new series based upon what science does and can do for us, rather than upon what we can do for science. We shall use the findings of science when and where they apply to our daily living with scant professional consideration of the fields of science that may furnish us our material.

In our junior high schools then we will teach *General Science* from the start, because our children need to know the ways science helps them to live in the fullest sense. We shall teach General Science in order that our pupils shall become healthier, happier, more efficient workers, whatever be their chosen field. We shall, through General Science, teach our pupils to be better able to use, intelligently and economically, the products which science supplies. We shall teach our pupils to depend less upon the hired specialist in workaday science, because each pupil will have himself the knowledge that formerly only the skilled worker possessed. Finally, we shall open up each junior high school pupil's mind to the possibilities of taking some part in the world of science as a worker in that field, but in our junior high school we shall not attempt to give even a rudimentary beginning of that training.

If in our discussion of junior high school Introductory Science we have taken an inordinate amount of time before approaching our subject itself it is because we need to know why we should teach science at all, rather than of what our science subject-matter should consist.

It might be possible to work out a course of study that would satisfy all our previous requirements, but that would still, if taught from the wrong point of view, give little that our earlier discussion indicated as valuable. In our introductory work, we must be surely progressing with our feet on the ground. We must be distinctly and positively utilitarian in our projects. We must find out the things of science that every boy or girl will be helped by learning and helped so far as is possible here and now, rather than at some future time.

Because our seventh year pupils are but children with a child's point of view, it is more essential that we stress at the start **HOW THINGS WORK**, rather than to begin too early a study of **WHY THINGS WORK** and kill the interest that otherwise might be awakened.

If we are skillful teachers of General Introductory Science, we will scarcely ever need ourselves to emphasize the **WHY** at all, because it is the nature of the normal boy or girl to want to follow up this **HOW** with a **WHY**, and it will be our duty to supply the more difficult side of science instruction when and where the pupil naturally demands it.

In the city and in the country the content of our Introductory General Science course will not be the same, because the demands upon the individual are different. Even in a single city the neighborhood demands may greatly differ and so we may propose a different line of initial work for each locality.

In a community where most of the families live in

detached houses the earliest science projects may be quite different from those taken up by a class whose parents live in city flats. So, too, in a rural community, the subjects of study in Introductory Science would be far other than those taken up in a village or in a town.

If our point of view is the correct one, then it is impossible for any one to write a text-book in General Science that will meet all local situations unless he write an encyclopedia from which one is free to select the topics that are locally most significant. Indeed the best texts now in the market are, in my opinion, those that offer the widest possible range for individual selection. For the sake of a needless uniformity supervisors may require a certain text to be used, but for the pupils' sake no text at all is often the better proposition, if only the teacher is well informed.

If we were asked to put down a list of projects for introductory science work we should have so heterogeneous a collection that it would defy classification. We might start with "How a fountain pen works" and end with a study of the various types of washing machines now on the market. In another community, we might study house-heating, or the refrigeration of food in cold storage, or in the family ice-chest. In a rural community, we might study septic tanks and end with the selective breeding of varieties of wheat. In one neighborhood, we might study the checking of malaria and yellow fever by the eradication of mosquito breeding places and in another we might consider the processes of aeroplane construction. The variety of worth-while possibilities seems almost infinite.

In our junior high school work we shall not be greatly concerned with abstracting that general body of law and theory that underlies the phenomena we study and

so marking our work as the rudiments of real science. For nine-tenths of our work we shall be content if our pupils know how the process or machine works, and a little something too about why it does as it does.

To be sure the instructor may, on his private memorandum, check off against each science — Biology (Zoology, Botany, Human Physiology), Chemistry, or Physics — the laws that his pupils have been led to call upon in their investigations. Such a list may surprise even the scientist himself when completed, but the emphasis at the start is not upon the law, but upon its utilization in some definite process.

Care must be used and great skill employed in arranging the projects a class may select, in gradations of difficulty, so that both the how and the why of the processes or machines studied will be suited either to the immaturity, or to the advancement, of the pupils who are studying it. Not only present interest, but equally, present capacity must be considered in arranging the course.

Where text-books in general science are available, the use of several texts, certainly not less than four or five, is heartily recommended, even though but one book per pupil be purchased, so that by using these various texts as reference books, the teacher and the pupil may be helped in arranging the projects or topics to be studied in some sequence based upon their difficulty of comprehension.

At Speyer School we devote to General Introductory Science five weekly periods for each of the junior high school years. For at least one year's work three of those five weekly periods of school time are devoted to science excursions in the field. Our science curriculum is still in the process of formation and we do not regard it as

satisfactory because it is, as yet, far too dependent upon a text-book arrangement.

In proportion as we are able to work out a series of graded projects that are of significance in the lives of our pupils and in proportion as our teachers are able to break away from the conventions of a text-book classification on purely logical lines we shall be able to realize our aims.

The greatest problem for us is to find teachers who have the originality, the initiative and the information necessary for such a course as we are attempting. In proportion as our teachers are able to meet these newer and more difficult demands, to that extent we are measuring up to our possibilities.

Finally, a word of caution is needed to the instructor lest our little students of General Introductory Science become pseudo-scientists through their own first meager study, and imagine that they know "all about" engines, or motors, or aeroplanes because they have had some tiny glimpse of the principles of science that underlie them.

The good teacher of general science will be careful to give full emphasis to the difficulty and the extent of each field whose gateway he swings open for the instant. If, for example, he explains the principles by which a submarine controls its rising or submerging, he will, somewhere in the explanation, make it plain that volumes need to be studied to thoroughly understand what he so superficially elucidates. Let the children know at every step that such science as they now are gaining is most rudimentary and superficial, even though it is, as far as it goes, a glimpse of fundamental truth.

If there are good reference books in the library, pupils may be assigned to bring them in for class observa-

tion, even when their content is far beyond the present intellectual capacity of any one in the class. This, indeed, may be necessary to prevent many a young enthusiast from turning toward achievement in science a mind and an ability that might be far better employed in selling goods behind a counter.

Once in a technical high school, I had the opportunity of questioning and testing over a hundred boys who professed to have entered this school so that they might become civil or electrical engineers. A survey of this group found not a single one that had any idea of the length of time and amount of study necessary for the accomplishment of his professed ambition. Some few indeed expected to become electrical engineers after one year in high school! These boys had studied electricity for about ten lessons or so in their elementary school and found it so interesting with bells and buzzers and telegraph sounders that they were filled with a desire to spend a life time in working with the mysterious power their home-made batteries produced. For their enthusiasm we may have no criticism, but for the teacher who let them go without a word of warning, we may have serious censure. As teachers of general science in the junior high school, let us open the doors of achievement in science to the capable and the ambitious, but let us be sure our pupils see the inevitable requirements that lie just within the threshold. Our pupils must be shown at some time on each topic what they *have not* been taught as well as commended upon what they really may have learned.

So, at the conclusion of our discussion, our scientific friends may say — decidedly this General Introductory Science is not *science* at all. In this we must perforce agree if by science we mean a study of the theories and

laws of chemistry and of physics and of biology with some scant reference to their application in the laboratory. Yet if this be not introductory *science* by what other name shall we call it? At least, we know what we are doing and why we are doing it, and we are firmly convinced that it will help our children to do better the things they will do anyway. Therefore, let us not be disturbed as to whether or not it be *science*, convinced as we are that it is both necessary and vital education.

QUESTIONS

1. What are some of the gains that the average American family has secured by the division of labor?
2. What loss in education have American children and adults suffered by this division of labor?
3. What are the chief arguments against emphasizing the teaching of scientific laws or principles in the junior high school?
4. If we do not emphasize the *laws* of science why should we teach science at all?
5. Who are some of the men in my own community upon whose knowledge of science (great or small as that may be) my pupils' food, clothing and shelter chiefly depend?
6. Who are some of the specialists whose services we require in order to make good losses suffered through our own ignorance?
7. What may be some of the more worthy aims of General Introductory Science in the junior high school?
8. How may a knowledge of "how things work" as contrasted with "why things work" still be of value? (See Professor Briggs' definition)
9. Why should we begin with a study of "how things work"?
10. Why should the content of our course differ with the community?
11. What are ten topics or processes in General Science that may well be studied in a rural community?
12. What are ten topics in General Science that may be studied in a city.

13. What is the greatest problem in introducing General Science instruction in a junior high school?
14. What caution must all teachers of General Science keep constantly in mind in every general science project?
15. What should our children be taught regarding the education of a scientist?

CHAPTER X

INTRODUCTORY SOCIAL SCIENCE

Let us admit at the beginning of our new chapter that we are not most of us intensive students or specialists in history, civics, or geography. Let us admit too that we are less concerned with what we can *give* to a study of these subjects than what we can get from them for our pupils' good. Let us admit further that we may for once be leaving the solid ground of precedent and experience and be essaying the thin air of theory in our discussion.

Nevertheless, we have, with all our admissions, reserved one point of strategic advantage. A history of the world might be written by some all-seeing eye based upon the men who refused to make progress because they knew the thing was impossible. But the histories we study naturally cannot tell us of these men who were dead to progress while they yet lived.

So because of our ignorance we may still strive to work ahead never knowing as the savants do that we are attempting to do that which cannot be done. And yet we are not wholly untutored for we have studied history, geography and civics at least in elementary and high schools and may be studying these subjects still as we attempt to keep up with the times, in the public press, the current magazines and even, occasionally, in the periodicals of the specialists themselves. Indeed even not so long ago some of us may have been entertained or even tempo-

rarily amused when printed court records showed one of America's foremost producers to have a more limited knowledge of the world history than that possessed today by many children in school. And yet after sober second thought still more of us might have been willing to exchange for America's ultimate happiness a score of our best historians for one master mind in business organization and mechanical production.

And yet with all our boasting of ignorance, let us still approach this new field with something akin to reverence and awe, for what we are, and what our children will be, depends to no small extent upon what the past has taught us, whether from tradition, sources, social intercourse, or written records.

HISTORY

Of all the subjects in our junior high school program of studies, there seems to be the least agreement upon the course of study in what used to be called American History. In America we seem to know far better what to *put in* such a course than what to *leave out*, with the result that most American specialists in history and in the teaching of history, propose today a course for children that many grown men and women would find it difficult to pursue with credit.

Presumably one purpose of teaching history in our schools is because it is supposed to have at least some influence upon our daily living, helping us to solve the present problems we meet as individuals or as social groups. As a matter of experience few of us adults who have studied the history once required in our free schools will be able to furnish any extended evidence that our conduct of life or solution of daily problems has been to

any marked extent modified by what we learned from the history we studied in school.

And yet we have undoubtedly been strengthened as a people by a common body of historical knowledge, because sympathy is based upon acquaintance and acquaintance consists, in part, of knowing what the other man or the rest of our community believes and accepts as fact. From a study of the causes that have impelled our ancestors to certain courses of action we may be unconsciously influenced to courses of action today, that we believe to be more or less similar to and in agreement with what the founders of our nation are reported to have done.

However, it is at least worth passing notice to observe that while there may be such a thing as the history of a nation or a history of the world, after all what we are able to study in text books of history is not history itself, but rather the opinions of some student or students of the past as to what once happened and why it happened. Even upon such an historical struggle as the War for Independence — or as our children know it — the Revolutionary War — there is still the greatest diversity of opinion as to the causes of that war, the progress of the war itself and, finally, as to many of the results accomplished. If we wish substantiation of this disagreement, we have but to compare this same story in the text books used in America with those used for children of similar ages in England. The more indeed we compare even the various text-books used in our own American free schools, to say nothing of those used in England, France, Germany, Italy and Russia, the more we are apt to be convinced that the study of history, in so far as it concerns school children at least, is not a study of what happened in the past, but of what some

man (or group of men) believes to have happened. Indeed, if we can follow the intricacies of the expression, school-book history is not frequently largely built upon the author's idea of what he believes the children of his nation ought to be taught to believe, rather than upon any idea of a statement of causes and events that would meet common acceptance from all who might be more or less concerned.

These two difficulties, the first resulting in crowding our school text books and our school courses with more historical situations than any child can possibly be expected to become reasonably acquainted with and the second resulting in teaching that kind of history in which the author is personally interested, has brought our school work in history to a very difficult pass.

There is still some comfort, however, in finding that practically all teachers of history agree in believing that the final result of a child's instruction in history should be a better understanding of the present. The difficulty remains in a selection of any reasonable number of past events that our modern American historians can agree upon as pertinent today.

The extreme point of view as illustrated by some specialists in history might be summed up as follows:

"One can never be certain what knowledge of the past will be pertinent in helping us to solve present problems. The knowledge that might have served us in 1921 may not be at all the knowledge that will serve us in 1925. Therefore the only safe course is to teach a more or less complete history of the world to all."

As a result of this point of view our school history texts have grown from two hundred to five hundred pages and the end is not yet. A generation ago our American

school texts began with the periods of exploration and discovery, took up the period of colonization, passed on to the Revolution and hurried to the Civil War. From a child's viewpoint, it was a military history almost exclusively. The people of America seemed to us to be forever fighting and so nothing aside from generals, campaigns and battles seemed to us as pupils greatly worth while. Recognition of the fact that the schools were teaching almost exclusively a military history of America and of the United States seemed finally to have been the cause of the inclusion of other points of view in history texts—so without omitting much that had been taught, there were added here and there bits of political, industrial and even economic history, that seemed to demand attention. Moreover, a generation ago we were far more separated from Europe than we are to-day and our children, except in the advanced grades, were required to study little of what had happened or was happening in Europe except as in advanced and specialized courses they may have studied the History of England or of some continental nation. Of course in the colleges we studied Greek History and Roman History for culture, but rarely below the college except in the higher high school years of the "Classical Course."

Today we find Ancient History required in many pre-grammar grades and a history of American Beginnings in Europe added to American History in the elementary school, while more and more space in our school texts is being added to cover the development of American *and related European* political government, American *and related European* industrial organization, American agricultural extension, etc., etc.

At this point let us for the time leave our discussion of American school book history suspended, if you please,

in mid-air in order to consider other related junior high school requirements that may affect our final judgment. Yet as we leave this subject for the moment, let us carry with us the conviction that in this current year we could easily find grounds for teaching in our junior high school an Industrial American History, a Political American History, an Economic American History and even a History of American Business Organization that might possibly find at least as much present day justification and so, of necessity, for each as many added pages of school-book space, as were once studied by our fathers in their American military history.

GEOGRAPHY

Fortunately for our youngsters, the study of geography does not seem to have extended itself to the same degree that the study of history has done and yet even here the extension has been enormous. It was one thing to have studied American geography when all that one was required to know of the land west of the Mississippi was that there were prairies, plains, a mountain range, a desert and some mountains on the Pacific coast. It is quite another thing to study this same region in the geography of today that tells of states, cities, industries and occupations west of the Mississippi that are quite as important to an understanding of American geography as much or all of what our fathers studied of the Eastern states. More and more the waste places are being made fertile and with every extension of civilization our study of geography must needs advance both in quantity and in quality as well.

Once we might, for example, study a river by knowing where it rose, in a general way the direction in which it

flowed and into what body of salt water it finally emptied. Today we must know that same river as described by the character of its current, its seasonal volume, its usefulness to commerce, its availability for water power — not for saw mills merely, but for power plants to energize scores of important industries — in short, the energy which the river furnishes to the various towns and cities that it passes. Then, too, the river may have its use for irrigation, actual or projected, to say nothing of its effect upon the health of the thousands of communities it passes by and its employment as in Europe for many other municipal uses. So much has our geography of rivers grown.

In much the same way a city that might once have been characterized by a single predominant industry, as we may have studied it — Philadelphia, carpets — Chicago, meat packing — New Orleans, sugar — may now be equally important for a dozen or more other industries that have grown up in recent years. Without exaggeration we may, when we consider the extension of the study of geography today as compared with the geography our fathers studied, say that even the requirements in geography have increased a thousand per cent. Here too we meet with subdivisions that our fathers as school children rarely considered. Today we have not merely a greatly extended political geography and a much more scientific physical geography, but an almost wholly new commercial, industrial and even economic geography to be considered as well.

More and more the conviction has been growing along with the growth of the school history and school geography that for the sake of our children "something must be done about it," but we have been content for the most part to sit on the side lines and watch the struggle

for school recognition that these subjects were carrying on with other studies in our junior high school program.

CIVICS

Added to our greatly increased requirements in history and geography, a third related subject has managed to force its way into our elementary and secondary program of studies. Once a part of history, our new subject, Civics, has of later years been claiming more and more attention as a subject of study itself. So we have in many elementary and high schools today a course (or courses) in Civics with its own separate requirements, its own sequential graded outline and its own increasingly divergent point of view. How dull, dry and unmotivated school-book civics of the past once was, many of us can testify from experience. The three branches of our government — legislative, judicial and executive — often had the same degree of interest for us children as would three great roots of an overturned stump wasting away from dry rot. Indeed in our lower elementary grades where this new subject has been introduced in many school systems, the natural interest of a sixth-year school child in the theory or practice of civil government is practically non-existent. Yet because the authorities feel it to be none the less something that our children really need to know, we are insisting that it be added even to the elementary program of studies.

Not so, however, our newest accession to the social science group — Community Civics — which is bound to come into greater and greater prominence as its possibilities for good are established in the many school systems where it has already been introduced.

The possibilities of making more *appreciative* Amer-

ican citizens are already being worked out in practice. The proponents of this newest course are asking us—"Is it not possible that we have been so in the habit of taking the good things our local communities do for us, for granted, that we have become blind on one side and see only the less creditable things of which our city governments are sometimes guilty."

Community Civics has for one aim teaching us to appreciate the blessings we enjoy as the result of community government. We accept too frequently without thought the protection of our lives and property. The police, the firemen, the health officers rarely receive their due because we cannot even imagine what life would be without them. We turn the faucet at our sink with never a thought of the tremendous obstacles that had to be overcome by community action to give us this one convenience.

The plagues that once carried off millions have been almost wiped out, without our ever being conscious of the never-ending watchfulness of those who are protecting our community health.

Hanging would be a pleasant death in contrast to the death many of our ultra-radicals would suffer if they themselves were simply exempted from the protection of the local government against which they rage. Indeed few of our anarchists would live to inveigh against the governments they scorn were it possible for them to experience even for a fortnight entire freedom from the protection which civil government throws around them through their every living moment.

There will be a place in our junior high school program of studies for Community Civics as the study of what we owe in appreciation to those who have managed our civic affairs far more creditably than most of us adults have realized.

SOCIAL SCIENCE

At this point some may be led so far afield by possible false deductions from our earlier discussions as to wonder why aside from community civics we need to worry so much about our social studies at all. Let history, geography and civics fight it out, they say; the world will keep on moving and the schools will keep open whether we have one or all, or even none of these studies in our curriculum. But here is where so many fail to grasp the essential necessity of these same subjects that we have apparently attacked.

In so far as our American school children fail to be educated in enough common history, geography and civics to get along with each other as adults, to that extent our whole national organization and national civilization is weakened or imperilled. The time was, in the development of the human race, when every stranger was an enemy and the little tribe or clan was unceasingly at war with its strange neighbors across the lake, the river or the divide. To no markedly less extent we civilized nations of today are still ready to fight the stranger, but with this great difference, that there are fewer of us strangers to each other with each succeeding century. If we hundred million souls in the United States of America can live together in more or less peace and harmony among ourselves, it is largely because we have a common body of knowledge, a common fund of accepted tradition, a common faith in our future as an outgrowth of our past. In so far as we locally quarrel among ourselves, it is largely because we do not yet fully understand each other, because on one or both sides there is ignorance of the history, geography and civics in which the other side believes.

If we are to have a United States of America free from civil strife and civil war, we must have our children trained from their earliest adolescent school days in that body of social knowledge that will best enable them to live together as adults in sympathy, harmony and friendship. And equally we must have as teachers of these subjects men and women who are teaching what they believe in their very souls as necessary and undebatable. There is no possibility of our children learning from a contentious quarreler how to get along with one's neighbors, unless by very contrast the children are led to seek the better path. Neither are we as yet compelled to open in our junior high schools laboratories for the testing of new social theories upon confessedly debatable topics. Not for a moment that all this testing and trying is not vitally important to our national and world progress, but rather that in our junior high schools we are scarcely warranted in experimenting with our children's happiness to such an extent as this may entail. If, however, we can first teach our children the art and the science of "getting along with each other," we shall have less reason to fear that they will ever fly at each other's throat to settle some new problem that may present itself when they have grown up.

So, for our junior high school we propose a new study at each other's throat to settle some new problem that or some older studies revamped — not history, not geography, not civics — but so much of each of these subjects as will best fit our children to get along with each other when they become in time the men and women of their generation. Call this, if you please, Introductory Social Science, but let it be understood that it means in homely language, "*The art and the science of getting along with each other*," whether "each other" includes one city, state and nation, or extends to distant shores.

With this as a criterion much of the over-burdened courses in the older social subjects will be cut down to something nearer the possibility of reasonable achievement. What do we need to know about the explorers and discoverers *to get along better with our neighbors of today?* Assuredly something, but possibly not all that our children have been asked to learn. What do we need to know about the war of the Revolution? Perhaps less about the campaigns and generals and more about the political, civic and industrial situation of that time. What do we need to know about the Mexican war? Assuredly much more of some things that our histories have been willing to tell. What do we need to know about the campaigns of the Civil War? Just so much as will enable us to live in greater sympathy, added harmony and more lasting friendship with the men and women whose fathers fought ours over half a century ago.

If New Hampshire and New Mexico, different as they are in location, climate, soil and industries, still feel themselves brothers in a great national family, it is in part because in each state the children in the schools and those who were once children in school have studied in their geographies the climate, the soil, the industrial conditions, that each must contend with, so that the news from one state reaching the other enables each in turn at once to put himself in the other fellow's place and to experience in sympathetic imagination the same feelings, the same emotions that the one affected really experiences. So it is, in countless ways, that geography as a study of how our neighbors live, makes not only our world larger but our hearts as well.

Finally, Civics as a study of how people get along together under a common government in smaller or larger communities must be included in any such course

in Social Science as we would plan. Even as we study this chapter, courses in municipal coöperative enterprise — Community Civics — are rising into national prominence as worthy subjects for school study. One purpose of many such a course is to unify and solidify the school children of the community by educating them upon matters of their common interest, showing them to what a tremendous degree they are co-partners in the huge business of living together in peace and comfort.

As in our newer junior high school mathematics, we no longer leave for possible college instruction simple mathematical conceptions that may be appreciated and employed now, even though these conceptions were once classed solely as a part of mathematical knowledge that even many college students did not attempt to study, so in our newer social science we shall choose from the higher fields of civil government, economics and finance such simple conceptions as are in themselves significant and within our junior high school children's mental reach.

In every case our basis for selecting one fact and passing over another, for studying one movement and barely mentioning another will be the value of the fact or the movement as an aid to our present problem of "getting along with each other."

The specialist in history, geography or civics will still have his university courses into which he may delve for his own personal satisfaction, or for the better ultimate guidance of us all. The school boy, however, will not be asked to study history, geography or civics as the specialist, but rather as the man on the street who wishes to live in peace and harmony with his neighbors across the street, across the divide, across the ocean.

QUESTIONS

1. In what ways does the Geography which I studied differ from that which I may be called upon to teach today?
2. What have our writers of American history text-books been conspicuously unable to decide upon?
3. What type of history has been predominant in our American text-books?
4. What concrete and immediate value may a study of Community Civics have for any junior high school pupils?
5. What basis of selection of facts and movements to be studied (and to be omitted) do I propose?
6. What arguments can I advance for this basis?
7. Taking a modern text book of history proposed for use in the seventh, eighth, or ninth school year, can I classify, on the basis I selected, its teachings as *pertinent* or *insignificant* for the following periods:
 - (a) Exploration and discovery?
 - (b) Colonial wars?
 - (c) The War for Independence?
 - (d) Framing our constitution, etc., etc?
8. What present-day problems can I name which may be better settled if our study of history — geography — civics — is given a new purpose?

CHAPTER XI

TEACHING THE APPRECIATION OF ART IN THE JUNIOR HIGH SCHOOL

If by art in the junior high school, we understand not simply Drawing and Design, but the art and practice of Music as well, we may group them in a single chapter for purposes of discussion.

In the first place, let us admit that not one in ten thousand, or possibly not in one hundred thousand, of our pupils will ever become an "artist" in the narrower sense in which that word may be used. Such students as may show unusual talent or promise of superior achievement in these lines of endeavor must be expected to get even their earliest professional training elsewhere. However, we may be within the probabilities if we maintain that at least one in ten of our students may be taught to enjoy and appreciate the art of others and so to enrich and to beautify his own life, after school instruction is a thing of the past.

To be sure some form of drawing as a convenient means of communication or record may be used by almost any boy after his leaving us, but this is not an Art, nor anything approaching art as we are using this word. If our guide is to be the selection of "the things that our junior high school boys will do anyway," we may be fairly safe in leaving the idea of making our pupils "artists" as one that may be eliminated at the start from the aims of our junior high school curriculum.

The difficulty in this elimination is, however, very real. In most of our courses of study, whether for state or city adoption, the educational authorities, feeling their own shortcomings in the field of art, have called in those who really were, or who aspired to become, *artists* in the higher meaning of that term. As a result, our courses have been too frequently planned by those who outlined work which they as mature artists believed either had been, or might have been, directly helpful to them as children in school. So, while all of the proposed course may seem natural, interesting and unspeakably simple to the artist who plans it, the chances are not small that much, if not all, of this course will seem to the average youngster that approaches it unnatural, uninteresting and unspeakably difficult.

Though it may be that some artists, recognizing the true situation, have attempted to plan courses in the appreciation of art for adolescents, the final resulting course has not, after all, been greatly modified. Even the appreciation of art as seen by an artist is a highly technical and specialized ability, which requires technical and specialized training and so an approach to Art Appreciation is often planned that might approximate in difficulty trying to teach a two year old to talk by instructing him in the rules of English grammar.

If our pupils are to learn to appreciate and so to enjoy the beautiful paintings, the beautiful statues, the beautiful buildings that they may later have the opportunity of seeing, or to enjoy the beautiful music that they may later have the opportunity of hearing, some of us may feel that they should be led toward this enjoyment by being given the opportunity to develop it in the presence of the things they later may be led to love. Indeed some may believe that children can

gain an appreciation of the beautiful in art by being brought constantly in contact with it, in much the same way as a child learns to speak by constantly hearing his parents' and playmates' conversation.

Thorndike in his Educational Psychology has emphasized the value for citizenship, of training our children in what he calls the unselfish pleasures of life. Chief among these unselfish pleasures comes the enjoyment of great works of art. When one enjoys a dish of well-prepared food he eats it and destroys its possibility of furnishing enjoyment for others, but when one enjoys a great painting his own enjoyment is increased rather than diminished by knowing that perhaps a million other people have feasted their eyes as he is feasting his. And so indeed a miracle appears, for each observer takes away in turn something he did not have before, yet leaves the source of his new treasure wholly undiminished. Yes, even more, for the real lover of art has his own pleasure increased almost directly in proportion to the number who enjoy the masterpiece *with him*. So it is that our real art lovers who have the means to gratify their love of beauty no longer lock up their treasures in their private homes, but in the public museums, or in other suitable places, permit the one who wills to come and share the emotions that the old master can call forth. Only the man or woman of warped spirit, or without real art appreciation in his being, locks up the masterpiece he may be able to secure, and if he does this we may be sure that his interest in the treasure is almost wholly in the advertising power that comes to him as its owner, and that a bent pin, if similarly priced and equally well known, would be as much appreciated.

So since the art treasures of the world are being more

and more brought within the possibility of enjoyment by one and all, the probabilities are that more and more of our pupils, as one of "the things they will do anyway" will see treasures of art which may add greatly to their happiness as men and women if only they themselves have developed the capacity to enjoy them.

Not so very different are the possibilities in music, though necessarily more limited. Those that can both see and hear the masters of the human voice, or of the violin, or of the great stringed orchestra, are a thousand times the numbers of a century ago. Where once these living masters delighted only the royal courts, today the crowded theatres, or opera houses, permit thousands upon thousands to hear each year the master of his art. And indeed, however much we may shock the refinements of the over sensitive, we must include too the possibility of those mechanical devices that reproduce to a certain extent the human voice or human touch. However much the connoisseur may sneer at "canned music" many of us are fortunately still not upon so lofty a plane that we cannot enjoy Caruso upon the phonograph or Paderewski upon the player piano. Much less for the while are our junior high school pupils beyond the possibilities of such enjoyment.

From such an introduction as we have made together, it may be possible for us to plan our junior high school work in art to give to each young student in our class some inkling at least of the pleasures of art appreciation and to start him upon the road to the enjoyment of the unselfish pleasures he may both get and share.

PICTORIAL ART

In order that we may not confuse the rudimentary

instruction in perspective that may be on our printed course of study with the larger possibilities of art appreciation, would it not be well for at least one year of our three to put no pencil to paper save as the inner impulse urged us to draw?

With different schools a different year may be selected, but all in all, the first junior high school year seems the best to those that have been experimenting with this work.

To be sure, if the higher schools would grant credit for a year of art appreciation, we might prefer to put this field work later in our course, possibly in the ninth school, or third junior high school year, but because there is as yet no such opportunity for us, we may only select a year that belongs to us alone. Therefore we are almost compelled to select for the time being our first junior high school year unless we are willing to handicap our pupils by giving them work in Art which, while it may be better in the highest sense, is not so helpful in meeting the requirements that lie just ahead.

For the first junior high school year then we propose to have no drawing in the class room, but to use our drawing period for actually seeing (even if not at first enjoying) the great works of art that may be brought to us in pictures if we indeed cannot always go to them.

At Speyer School, with the treasures of a great city within reach, our two successive periods of drawing are used for Art Appreciation in the field. Great paintings may be seen at the Metropolitan Museum of Art; classic statues may be seen there too. The treasures of the goldsmith, the potter and the weaver may also be used in the attempt to awaken appreciation. Always the instructor leads the way. No trip is taken on impulse or without due preparation. The period of prep-

aration may be taken occasionally from time in English composition, but more often on the ground itself to discuss quite carefully what is to be seen and why. In rainy or inclement weather, and it takes a real storm indeed to keep our boys at home, the school stereopticon with slides loaned by the Museum, or by the State Department of Visual Instruction, is used to bring to the school objects of art that may have value for our work. Not only in the Museum which is our chief treasure trove, but in the historic mansions, now city owned, the children may see the work of Sheraton or Heppelwhite in furniture and gain perhaps some suggestion of the possibilities of art enjoyment even in furnishing and decorating one's simple home.

Even from the street one may see beautiful buildings, planned by great artist-architects, and so learn to recognize that even a building may be a thing of beauty and so become a joy forever to the one whose eyes can see the harmony it portrays.

At this point there may be some who will insist that we can teach beauty only by teaching ugliness as well and to a certain extent this may be true. However, with our junior high school pupils there need be little fear that they will reach any such high point of art appreciation as will make them so appreciative of the enduring things of art as to be caused unhappiness and suffering by the less beautiful or even the ugly things they may be forced to see. And yet to the extent to which all our adolescent boys and girls are led to avoid the ugly, or even to prefer the beautiful, we have added something not only to their lives, but to the beauty of America itself a generation hence.

At the end of our first year, convention and the demands of the higher schools may cause us to return to

the routine lessons with pencil, crayon, or brush, but the impulse to prefer the beautiful and an awakening appreciation of beauty may make this routine work far more interesting and more successful than otherwise would have been possible.

For all this work it may be seen a teacher with a highly specialized ability is required. If we were free to choose such a teacher from an open field, let us confess we would go slow in engaging an "artist" or even an aspirant to such distinction, but would prefer to select one who possessed herself what we wish our pupils to secure, the enjoyment and appreciation of the art of others. Without being at all humorous we might propose some psychological tests that would help us to discover the teacher that we need. Find the individual that would prefer visiting the Museum of Art to attending some social function, whose own dress and belongings show uniformly good taste, who does not gush in the presence of a masterpiece, but is silent, trying if at all, still in vain to find words to express, or to explain, the satisfaction, she secures. Such a one, though she never yet had touched crayon to paper, or brush to canvas, might still give promise of being the one of most value to us in this new line of work.

Similarly in Music, the man or woman who will deny himself the food he needs to save up money to hear a great virtuoso or soloist, gives promise of being better able to help us in teaching the appreciation of good music, vocal or instrumental, than the one who sang with his college glee club or gives lessons upon the piano.

Of course when one is entering a new field and this matter of teaching Appreciation is a new field, although for years it may have appeared in various printed courses of study, it is well to avoid being too positive in matters of this kind and yet it may do us no harm to recognize

that possibly some present teacher of Latin, mathematics, or history may be the one best fitted to conduct these appreciation courses in our junior high school.

APPRECIATION IN MUSIC

As field work in Art Appreciation replaces for one year the usual class room instruction, so in Music for one-third at least of our junior high school course, Music Appreciation replaces the conventional drill in sight reading and part singing, but with one difference. Our work in the appreciation of good music is and must be carried along with actual class room work, taking a part of each day's, week's, or month's work as the work to be studied best adapts itself. But certainly some part of every fortnight at most should be devoted to Music Appreciation.

It may not be time misspent to consider in a little more concrete way than earlier in our chapter, some of the actual selections that might be used.

In the first place since most of our pupils cannot attend grand opera, we must bring the opera into the music room in story and on phonograph records, helping occasionally, perhaps with the piano, to isolate or emphasize the finer points of theme or melody.

For our year's work we may rest content if our pupils are able to tell the stories and recognize the principal or best known orchestral or vocal selections of each of eight or ten operas, such as Carmen, Lucia di Lammermoor, Martha, Faust, Il Trovatore, Aida, Tannhauser, Lohengrin, La Boheme, Pagliacci. In addition, we might require the recognition of one or more selections from operas that might not be known in their entirety, as the Overture from William Tell, the Overture from Fra Diavolo, the Waltz Song from Romeo and Juliet, the

Intermezzo from *Cavalleria Rusticana*, the Coronation March from *The Prophet*, the Duke's Song from *Rigoletto*, the prize song from *The Meistersinger* and possibly selected motifs from *The Ring of the Niebelung*. Finally, we might make a list of songs or selections "that every one should know" and use the phonograph or piano to bring the pupils and the music together. Such a list might resemble to some extent, the Music Memory List used in the New York City schools:

Musetta's Song — <i>La Boheme</i>	Puccini
Caro Nome — <i>Rigoletto</i>	Verdi
My Heart at Thy Sweet Voice —	
Samson and Delilah.....	Saint Saens
Trio — Prison Scene — <i>Faust</i>	Gounod
Barcarolle — Tales of Hoffman.....	Offenbach
Intermezzo — <i>Cavalleria Rusticana</i> ..	Mascagni
Meditation — <i>Thais</i>	Massenet
Triumphal March — <i>Aida</i>	Verdi
Dagger Dance — <i>Natoma</i>	Herbert
Anvil Chorus — <i>Il Trovatore</i>	Verdi
Miserere — <i>Il Trovatore</i>	Verdi
Toreador Song — <i>Carmen</i>	Bizet
Soldiers' Chorus — <i>Faust</i>	Gounod
Minuet — <i>Don Giovanni</i>	Mozart
Sextet — <i>Lucia</i>	Donizetti
Quartet — <i>Rigoletto</i>	Verdi
Overture — <i>William Tell</i>	Rossini
Lift Thine Eyes — <i>Elijah</i>	Mendelssohn
With Verdure Clad — <i>Creation</i>	Haydn
And the Glory of the Lord — <i>Messiah</i>	Handel
Ave Maria.....	Bach—Gounod
Hallelujah Chorus — <i>Messiah</i>	Handel
Andante — <i>Fifth Symphony</i>	Beethoven
Theme — <i>New World Symphony</i>	Dvorak
Andante — <i>Surprise Symphony</i>	Haydn
First Movement — "Unfinished Sym-	
phony"	Schubert
Spring Song.....	Mendelssohn

Salut D'Amour.....	Elgar
To a Wild Rose.....	MacDowell
Narcissus	Nevin
Humoresque	Dvorak
Morning	
Anitra's Dance.....	
In the Hall of the Mountain King..	
Ase's Death.....	
Hungarian Rhapsody No. 2.....	Liszt
Wedding March.....	Mendelssohn
March of the Toys.....	Herbert
Nocturne in E Flat.....	Chopin
Minuet in A.....	Boccherini
Marche Militaire.....	Schubert
Dream of Love.....	Liszt
Chant Sans Paroles.....	Tschaikowsky
Minute Waltz.....	Chopin
Largo	Handel
Cavatina	Raff
Elegie	Massenet

NATIONAL SONGS

Hail Columbia.....	American Patriotic Song
Men of Harlech.....	Welsh Patriotic Song
Rule Britannia.....	English Patriotic Song
La Marseillaise.....	French Patriotic Song
La Brabançonne.....	Belgian Patriotic Song
Garibaldi Hymn.....	Italian Patriotic Song

AMERICAN SONGS

From the Land of the Sky Blue	
Water	Cadman
The Year's at the Spring.....	Beach
Mighty Lak a Rose.....	Nevin
O Promise Me	DeKoven
Carry Me Back to Old Virginny.....	Bland
Come Where My Love Lies	

Dreaming	Foster
Swing Low Sweet Chariot.....	Negro Spiritual
Flow Gently Sweet Afton.....	Spilman
Deep River.....	Negro Spiritual

MISCELLANEOUS SONGS

Sweet and Low.....	Barnby
The Lost Chord.....	Sullivan
Love's Old Sweet Song.....	Molloy
Hark! Hark! The Lark.....	Schubert
Who is Sylvia.....	Schubert
Home Sweet Home.....	Bishop

Our method of work would be to tell the story and play the records of each of the selections, not once but over and over again on different days, until the pupils became able to recognize each selection, tell the composer, the opera and the setting of the selection itself.

Securing the records may not always be a simple matter. Of course the school *should* own its records just as much as it should own its music books and its piano, but school boards are apt to regard the phonograph records still as "fads and frills" and force us to depend upon the good will of our pupils' parents to loan us the records for any one performance and such parents are not few. Many who may otherwise hesitate to loan records will do so if a deposit in full is left to guard against a possible injury to any record, while in some cities and towns the local agent will bring the records and play them himself for the sake of the advertising he gets from the performance.

After all, not a great variety of records but great versatility on the part of the teacher is what is most needed. It may be possible for a skillful teacher to build the entire story of *Il Trovatore* around two or three

songs and to interest all in the music and the story of Aida by using only the triumphal march and the final duet. Other things being equal, the more good records that can be supplied for any opera, the better, but the finest collection that can be secured anywhere, will not replace the teacher's work, if the teacher himself really appreciates good music.

QUESTIONS

1. Can the junior high school attempt to train artists? On what do we base our reply?
2. Why, as a rule, cannot an artist himself plan a good course for adolescents?
3. What are some of the unselfish pleasures of life and why are they so called?
4. What is the modern tendency in the ownership of master-pieces of art and how does this affect our junior high school work?
5. What opportunities does my own neighborhood offer for teaching the Appreciation of Art?
6. What teaching of appreciation may be independent of my own locality?
7. What should be the basic requirement for a teacher of Art Appreciation?

CHAPTER XII

PHYSICAL TRAINING, BODILY HEALTH AND CHARACTER BUILDING

One often hears in any discussion of the place of Physical Training in our junior high schools that the Great War showed the people of America the need of giving more attention in school to the physical condition of school children. Of the young men included in the selective draft an astonishingly large percentage proved "physically unfit" to a greater or lesser degree — ranging from flat foot or defective teeth to more serious systemic disorders that made them wholly unavailable for the rigors of military service and to a less extent for the struggle for existence in any form of useful endeavor.

To how great a degree these physical defects could have been remedied or cured in school by corrective exercises and instruction in habits of hygienic living is still an open question. There is, however, grave doubt in the minds of most students of education as to the possibility of making any marked progress toward the physical perfection of school children until there occurs something approaching a right about face on the part of college professors, superintendents of schools and boards of education everywhere.

As we have often acknowledged, though sometimes grudgingly, the question of college entrance requirements affects to a very marked degree even elementary school instruction. According to our American

ideals of equality of opportunity, we are more or less obliged to consider every school child a potential university student and in our school work we must be very careful to close no doors of educational advancement to any child even when we know that possibly not more than one in ten thousand will follow the path of school and college instruction to its completion. Therefore until the colleges give decidedly more credit, in their sixteen or so "counts" or "credits" for admission, to the healthy, well-developed youth as contrasted with the sickly and under-nourished one, it is useless to expect the high school to be as much concerned about its pupils' physical condition as it is with "conditions" in mathematics, English, science or history.

Were the colleges to give four entrance credits to a course in physical training and hygienic living that would be in part measured by the applicant's own bodily condition at entrance, what a wonderful change we should experience in our own attitude toward our pupils' physical welfare. Not that we would ever bar from educational advancement those whose misfortune it was to be crippled for we are not discussing actual cripples, but that evidence of vigorous health would be accepted as at least some prophecy of the pupil's fitness to use his advanced training in a sane and healthy way for the benefit of the nation that helped to educate him. Would it not be interesting to note the new-born solicitude of the examiner in many worth-while things that are now overlooked and would it not be an altogether worthy and commendable solicitude?

As yet to be very frank with ourselves how many of us, teachers in elementary and high schools, are ourselves sufficiently *fit* to pass a rigid examination for military service? How many of us are sufficiently acquainted with

the scientific regimen of health culture to be able to give our pupils daily training in habits that will correct their individual tendencies toward physical unfitness in so great a variety of forms? It is hardly to be expected that men and women who have passed through high school and training school or college practically untouched by any worth-while instruction in hygienic living, can themselves give instruction from the depth of their ignorance to children who need the combined attention of a dentist, of a physician and often of a trained nutrition worker.

Yet may we not still further consider the situation? In recent years our school physicians and hygienists have worked out a series of symptoms or measurements to enable them very roughly to classify school children into four nutrition groups ranging from Nutrition 1, which stands for splendid bodily condition, down through Nutrition 2, which stands for a less obviously healthy condition, to Nutrition 3, or defective nutrition, under-weight and a lack of necessary vitality, and still down to Nutrition 4, representing a condition bordering on invalidism and break-down. Depending upon the location of our schools and the racial stock of our school children the number of those below par physically is found to range from fifteen to thirty-five per cent of the total number enrolled. In the various centers, intensive studies are being made to find the reasons for these "Nutrition Threes" and "Nutrition Fours" and so far as the results of these special studies are available they seem to show certain definite causes. Chief among these causes are *defective teeth, poorly selected food* (often also poorly prepared), *poor conditions for sleeping* (including a lack of sufficient sleep), *a weakened or contaminated hereditary stock*, and finally *a general neglect or ignorance* (in the pupils' homes) *of the fundamentals of hygienic living*.

If these be the causes, can any reasonable human being be found who will expect our schools or our school teachers of physical training, educated as they have been, to remove in forty-five minutes or less a day of physical training those causes that have no origin in school work or school attendance, especially when each teacher meets on the average thirty-five pupils at once and when the physical training time is so often allotted as *play time* or *recess time*, purely for the mental relaxation and physical exercise.

The very diagnosis of a school child's bodily condition is a matter demanding the attention of a trained physician; the teeth must be taken care of by a dentist; a specialist in nutrition should prescribe the diet and its preparation; a trained social worker should carry conviction to the pupil's parents that the child's physical condition needs greatly increased care and attention. In almost every school in America there is an unanswered demand for the professional care of the children's health by people who are specialists in treating each one of the major causes of actual or potential malnutrition and ill health.

Indeed when all is said regarding the unreasonableness of expecting our teachers of language or of mathematics to correct their pupils' defective bodily conditions, one is apt to find it almost equally unreasonable to expect even the schools with specialists in physical training to assign this entire burden to such a teacher. As a rule, the teacher of physical training finds a prescribed course in games, gymnastics, setting up drills, apparatus work, etc., etc., that more than takes up all the school time assigned to his subject, while in after school hours the teacher of physical training is often expected to coach and frequently to manage the school athletic teams in

their manifold voluntary activities. How then can he be expected, in addition to all this, even after the skilled physician has diagnosed each child's physical condition, to secure the necessary dental treatment or instruct the pupils' mothers in the purchase and preparation of food?

Having thus far succeeded in convincing ourselves that it is not only unreasonable, but impossible, for any one to expect the teachers of a junior high school, even the teachers of physical training, to safeguard, or to remedy, their pupils' general bodily condition, let us now proceed to find ways and means of accomplishing the impossible. If in the major subjects of the school curriculum we are once more pioneers in finding new and better ways of doing things that convention had decreed were unchangeable, may we not here also lead the way toward remedying conditions that appear irremediable.

In the first place, if we must assign to the subject of physical training the instruction each pupil needs in caring for his or her own body, then we must ALL educate ourselves sufficiently to become teachers of physical training to some extent at least, no matter what be the specialty for which the school board may employ us. Whatever be our specialty we all keep the roll books, mark the pupils' attendance and receive and dismiss our one "official class." Those in our official class are the children whose health and habits we may reasonably be expected to be best able to influence, for to these children's parents we report their children's school progress on our report cards, from these parents we expect notes of excuse for absence, and when these parents call to make inquiry regarding their children's progress, we are, or should be, the first ones consulted. We can then,

each of us, assume the obligation of finding out the physical condition of each of the children in our one "official class." Are they all "Nutrition Ones" and "Twos"? If they are, our duty is to keep them so. Are many "Threes" and "Fours"? We are then to leave no stone unturned to show them the path to health and vigor. If we have a school physician we must demand his diagnosis. If we have none, we may interest our own physician in voluntary service in this great cause. Failing in both, we must rely on our own common sense and powers of observation to make the first preliminary survey, and these measures need not be more than three as a general rule. (See pages 205, 206.)

A tape measure and the grocer's scale will give us one rude measurement of malnutrition if a table of normal heights and weights be obtained from almost any board of health. Children need not strip for us to see collar bones that are well covered to show health, or that stick out to show some form of child starvation. The child's nervous condition, whether jumpy and irritable, or lazy and drowsy, may give us the third measure, all indicating conditions that need remedying and that usually can be remedied by our interest and help.

Having made our first survey, no matter how accurate or how crude it may be, we can select our extreme cases as the ones demanding first attention and can send a personal letter, or a printed form supplied by the school, to the parents of such of our children as we are convinced need immediate attention. In many cases this simple note advising the parent to consult a dentist, or a physician, or a dietitian, will be all that is necessary to start the youngster upon his upward path. However, in many cases, a surprisingly large number too, we may expect rebuff or opposition from the parents (often supposedly

educated parents) who resent any suggestion which they feel reflects upon their care of their own children. Not only will the ignorant parents write — as one did to a teacher who tried to get a certain very dirty child cleaned up — "Don't smell him. Learn him," — but the know-

HEIGHT and WEIGHT TABLE for BOYS

Height Inches	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs.	11 Yrs.	12 Yrs.	13 Yrs.	14 Yrs.	15 Yrs.	16 Yrs.	17 Yrs.	18 Yrs.
39	35	36	37											
40	37	38	39											
41	39	40	41											
42	41	42	43	44										
43	43	44	45	46										
44	45	46	46	47										
45	47	47	48	48	49									
46	48	49	50	50	51									
47	51	52	52	53	54									
48	53	54	55	55	56	57								
49	55	56	57	58	58	59								
50	58	59	60	60	61	62								
51	60	61	62	63	64	65								
52	62	63	64	65	67	68								
53		66	67	68	69	70	71							
54		69	70	71	72	73	74							
55			73	74	75	76	77	78						
56			77	78	79	80	81	82						
57				81	82	83	84	85	86					
58					84	85	86	87	88	90	91			
59						87	88	89	90	92	94	96	97	
60							91	92	93	94	97	99	101	102
61								95	97	99	102	104	106	108
62									100	102	104	106	109	111
63										105	107	109	111	113
64											113	115	117	119
65												120	122	124
66												125	126	128
67												130	131	132
68												134	135	137
69												138	139	140
70													142	144
71													147	149
72														152
73														157
74														162
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76														174
														175
														176
														177

Prepared by Dr. Thomas D. Wood.

About What a BOY Should Gain Each Month

Age	Age
5 to 8.....	6 oz.
8 to 12.....	8 oz.

12 to 16.....	16 oz.
16 to 18.....	8 oz.

it-all parents will threaten as one did in my own work recently "to have the law on you" for daring to weigh and measure his child. Possibly it may be better to get each parent to sign in advance a note in which he expresses an interest in his child's physical condition and

HEIGHT and WEIGHT TABLE for GIRLS

Height Inches	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs.	11 Yrs.	12 Yrs.	13 Yrs.	14 Yrs.	15 Yrs.	16 Yrs.	17 Yrs.	18 Yrs.
39	34	35	36											
40	36	37	38											
41	38	39	40											
42	40	41	42	43										
43	42	42	43	44										
44	44	45	45	46										
45	46	47	47	48	49									
46	48	48	49	50	51									
47	49	50	51	52	53									
48	51	52	53	54	55	56								
49	53	54	55	56	57	58								
50		56	57	58	59	60	61							
51		59	60	61	62	63	64							
52		62	63	64	65	66	67							
53			66	67	68	68	69	70						
54			68	69	70	71	72	73						
55				72	73	74	75	76	77					
56				76	77	78	79	80	81					
57					81	82	83	84	85	86				
58					85	86	87	88	89	90	91			
59					89	90	91	93	94	95	96	98		
60						94	95	97	99	100	102	104	106	
61							99	101	102	104	106	108	109	111
62							104	106	107	109	111	113	114	115
63							109	111	112	113	115	117	118	119
64							115	117	118	119	120	121	122	
65							117	119	120	122	123	124	125	
66							119	121	122	124	126	127	128	
67								124	126	127	128	129	130	
68								126	128	130	132	133	134	
69								129	131	133	135	136	137	
70									134	136	138	139	140	
71									138	140	142	143	144	
72										145	147	148	149	

Prepared by Dr. Thomas D. Wood.

About What a GIRL Should Gain Each Month

Age	Age
5 to 8.....	6 oz.
8 to 11.....	8 oz.
11 to 14.....	12 oz.

Try and do as much better than the average as you can

Weights and measures should be taken without shoes and in only the usual indoor clothes.

asks the teacher's interest also. For this the school should supply an official form.

For the parents who cannot, or will not, secure dental treatment for their children there seems nothing that can be done at present except to urge them to insist upon the frequent use of the tooth brush by their children. For the parents who will not have their children's obstructions to good breathing (adenoids or enlarged tonsils) removed we can do but little. And yet even in these cases if we can induce the parents to feed their children at timely intervals with plenty of plain food, well supplied with vitamines (fresh milk and fresh vegetables) we can make great headway against the children's progressive deterioration. If to this we add repeated instruction in the necessity for a well-ventilated sleeping room and ten or more hours of uninterrupted sleep, we can still feel that we have done our part toward making health conservation a real factor in junior high school instruction.

Indeed if we are doing our *full* duty as teachers in this newer and most progressive type of school we can say — and indeed we must say — in answer to any questions as to what we teach, "I teach physical training (health conservation) and . . ." whatever our second or special subject may be.

The time for this work may not be scheduled on the daily program of the school, though it would be well if one stated period each week could be assigned to it, but for the most part it must be done in the twenty minutes or so before the morning session, or in a similar amount of time after school is dismissed. As a rule, this time is used for individual cases, checking up on the pupil's own reports on his health progress. For the preliminary health survey some schools declare a Health

Day during the opening month of each semester and the entire day is spent in measuring the pupils' physical condition. For this day each teacher is supplied with a set of printed directions and each pupil with a record card showing the items to be checked up. In New York City the form on the following page is used:

Note especially the directions to teachers in the upper right hand corner of the record card.

In many communities the school nurse may be expected to supply something approaching the professional examination of the school doctor, and to act as a connecting link between the class room teacher and the specialist. Where this school nurse is on the school payroll and under the supervision of the principal a great deal of good can be accomplished by her, for she becomes the one charged especially with the conservation of the children's health. Being always in attendance, at least during the forenoon, teachers may consult the nurse upon all matters regarding the children in their official classes. Afternoons the nurse may visit the parents of these children and explain the physical defects which need attention.

Until the local physicians appreciate the value of these health surveys, opposition may be found in some cases to any physical examination of the children which they do not personally make. If they are made to understand in advance that the parents will be required to refer their children to their family physician for supervision and prescription after the school diagnosis is completed, practically all objections from this source can be obviated.

It is not to be expected that each teacher will be able to make a complete and correct physical survey of each pupil. For the most part, the value of such a card rec-

PHYSICAL EXAMINATION RECORD

FOR TEACHERS
Born Measles Pneumonia Diphtheria Teacher's records are to be limited to the column marked
Scarlet fever Pertussis Gripe
"Exam", where evident defects should be checked (✓)

Name	History of	Measles	Pneumonia	Diphtheria	Gripe	2nd	3rd	4th	5th	6th	7th	8th
School Year												
Date												
Defect												
		Treated Exam. Re-Exam.	Treated Exam. Re-Exam.	Treated Exam. Re-Exam.	Treated Exam. Re-Exam.							
Defective Vision, with Glasses												
" " Without Glasses												
" Hearing												
" Teeth												
" Nasal Breathing												
Hypertrophied Tonsils												
Nutrition												
Cardiac Disease												
Pulmonary Defect												
Orthopedic " 4												
Nervous Disease												
Weight												
Height												
Remarks												
Inspector or Nurse												
Code:	EXAMINATION											
✓: Defect	Nutrition Grading	G: Glasses	M: Medical	P: Private Physician	O.K.	RESULT FOUND ON RE-EXAMINATION						
S: Eye Strain	1: Excellent 3: Fair	D: Dentist	O: Operation	I: Institution	+	Corrected or Cured						
	2: Good 4: Poor	R: Refused Treatment			-	Improved						
						Unimproved						

Dept. of Health, City of New York, Bureau of Child Hygiene,

Dept. of Education, City of New York, Division of Educational Hygiene

ord will be to "indicate suspicion" that the pupil has physical defects that need special attention. The use of the record is to direct the physician's attention immediately to possible defects and so enable him to survey of a school in one half or one quarter of the time that would be required if the physician had to make all the tests for each child, without the teacher's preliminary survey.

When no school physician is employed, the record card with its checks under various headings may be interpreted as a notice to the child's parents, reading "You had better look into the matter of having your son's diet — eyes — teeth — tonsils, etc., etc., examined by a specialist."

One can readily see now, if not before, that individual examinations of each pupil's physical condition cannot be made solely by the teacher of physical training unless he is freed from all other work. Even were that done, it would take a semester for him to cover even a small school without taking his pupils from their recitations in other subjects and so interfering with the scholastic progress of the school.

Having now and at some length discussed the reasons why the special teacher of physical training can not and should not be expected to be responsible for the physical condition of all of the pupils in his junior high school and having further agreed that all teachers should be expected to be to no small degree fellow guardians of the pupils' bodily welfare, it remains for us to consider ways in which the special teacher of physical training may contribute in turn to the welfare and the progress of the pupil in the other subjects of the junior high school curriculum.

First, on the purely technical side, in his gymnasium

or out-of-door exercises, the teacher of physical training may be reasonably expected to drill his pupils in certain physical and mental characteristics that will manifest themselves in all the pupil's school behavior. It is reasonable to expect that he will teach his pupils how to *stand*, to *sit* and to *walk* in a healthful and pleasing manner. To do this he must, in such modified sequence as best fits the individual or the group, establish first the reasonableness and the possibility of such instructions as he intends to offer. Then he may by example and directions show how the actual positions are secured. Finally, he must appeal to the pupils in such a way as to induce each one to accept as his personal ideal and goal that reasonable degree of perfection that is called for. Added to, or accompanying all this, comes the drill, the setting-up exercises and, in some schools, the bell, the club and the bar or wand exercises that make for good posture and carriage.

Second, the physical training instructor may be reasonably expected to imbue all his pupils with a reasonable regard for and skill in — instant response to a command, a physical alertness, snap, style and control, so that each one knows what it is to be "on hair trigger," senses all alert, fully in command of himself and still ready to accept and carry out the right order when it comes. Our fathers and grandfathers, more used to firearms perhaps than we are, coined many terms that may be well accepted by us in our physical training drills. Not only is the "hair trigger" alertness most desirable, but equally is guarding against "going off at half cock" or physical response before a command is completed. Not that we can expect one teacher of physical training to correct in his occasional drills all the lazy habits of a pupil's life time, but that we can expect him in the line of his work

to establish *ideals* of alertness and control that will endure far beyond his drill period. Indeed *establishing ideals* of bodily perfection under the control of an alert mind may well be one great part of the work in physical training and of possibly greater value than anything else in securing the hoped-for habits.

As a third requirement comes training in fair play. Outside the gymnasium or the drill period, no teacher has better opportunities for creating, by precept and practice, those ideals of sportsmanship and fair play that we consider to be essential characteristics of American manhood and womanhood, than has one who directs the school's athletic teams. When a school will, while all on fire to win, prefer defeat to playing a "ringer" or scoring on an undetected foul, one can be sure the instructor of physical training has done his part undeniably well.

The teacher of physical training, while he surrenders to each teacher of an official class, some of the work in making physical examinations that he formerly expected to do, assumes in turn new obligations that are not limited by the customary instruction in gymnasium periods. These major obligations may be reviewed as *Physical* — corrective exercises for posture and carriage; *Mental* — alertness, obedience, control; *Moral* — fair play and good sportsmanship.

So if the physical training teacher be left free to concentrate upon these three lines of work he will still be kept as hard at work as any one among the teaching staff.

Perhaps at this time when we are considering school athletic teams and the work in physical training, we may be so bold as to introduce a junior high school innovation that may run counter to the school and college prejudices of over a century.

For several generations, though more particularly in the last quarter century, the coveted college letter to be worn on the cap or sweater has been awarded only to the man who has defended his college on a carefully selected team in intercollegiate athletics. To many a college man the wearing of the "H" the "Y" or the "P" has meant greater honor than could be conferred by any royal diadem. This we would not change were it within our power. And yet in the high schools our attitude may be otherwise. By imitation our high schools and junior high schools have gradually taken up this honored college custom and the boy who is permitted, as a result of prominence in interschool athletics, to wear the school letter on his cap or sweater is pretty sure to be acclaimed a hero and a leader no matter how small otherwise may be his qualifications for such an exalted position.

Let us confess that in our secondary school athletics many a poor student and worse sportsman has thus been raised up as an ideal for his schoolmates to imitate. Let us confess too that occasionally some youngster who represented in his person, his character and his conduct almost everything (except bodily vigor) for which his school did *not* stand, has yet worn the coveted distinction and flaunted it for all the school to see until expulsion terminated his meteoric career. Thereafter we may have seen our school's proud letter displayed wherever loafers congregated or ne'er-do-wells assembled.

Is it not possible for us in the junior high school to plan to have each wearer of our school letter an all-around leader and an example of everything that is highest and best in our school life, rather than an example in one line alone? For each junior high school there is, or should be, an ideal boy, existing only in imagination to be sure, but

none the less real — for he is the type of boy we teachers would like to see filling every seat and the boy each of our pupils would like himself to be, for this ideal boy has many human and attractive characteristics that appeal to boys as well as to grown-ups. Because he is the boy we wish our boys to resemble, he will probably be more than an average athlete, but he will be a good student too, or at least no failure in the tasks that ostensibly he came to school to accomplish. Moreover, he will be an honest, truth-telling boy, brave in encounter, yet kind in his dealings with his fellows. He will not be selfish, self centered, or clannish, nor yet will he be "hail fellow well met" with every opponent of school authority.

If we can picture such a fellow in our mind's eye and then reduce his character to writing, we have the basis for awarding our school letter to those who will wear it with the greatest credit to themselves and greatest assistance to their fellows who will applaud and imitate them.

One school has been trying for some years to do this and, while it cannot report that it has fully succeeded, it still can report progress toward success. Not then so much as a model for others to imitate, as an illustration of how one school is trying to use its school letter to indicate real leadership, the Requirements for the Speyer "S" are appended much in the same form as they are handed to each boy in Speyer School.

The Speyer ratings, hereinafter described, may now merely be noted as 1, 2, 3, 4 and 5, ranging from 1 which shows the highest success, to 5 which indicates failure.

THE SPEYER "S"

Do You Want to Wear the Speyer "S"?

1. GENERAL REQUIREMENTS

1. In order to gain the Speyer "S", students must work towards a total of not less than 280 points, selected from the ones hereinafter described.
2. At least 70 points must be secured in each division, as 70 points in *physical*, 70 points in *social*, 70 points in *moral* and 70 points in *mental*.
3. Additional points above 70 remaining may be gained without reserve under any or all of the other divisions.
4. To those students gaining a total of 430 points, the SPEYER SWEATERS will be awarded.
5. No student will be eligible for the Speyer "S" until he has completed one year at Speyer School, or for the Speyer Sweater until he has completed one and one half years.

NOTE

1. A month before the end of the term, the Board of Judges, consisting of the principal or his deputy, three members of the faculty and four representatives of the student body, will meet for as long a time as will be deemed necessary to decide what students have met the requirements for the Speyer "S" or Speyer Sweater.
2. Every student must hold himself ready to appear before the Board when notified to do so, or to submit such written evidence as the Board may require.
3. All written material necessary in meeting the various requirements, or presented in any way for evidence, must be plainly written, on one side of sheets of the same size, all securely fastened together.
4. For every section covered, a new sheet must be used, showing your name, class, date, the division heading and the number of the section you are writing about, *viz*:

John Smith. Class D2 June 1, 1921.
 III Social Efficiency. Section 4, Helping Classmates

I PHYSICAL EFFICIENCY. 70 POINTS REQUIRED. POINTS MAX.

1. Making one or more of the <i>class teams</i>	20	
2. Making one or more of the <i>school teams</i>	25	
3. The correction within six months, or marked improvement, of any physical handicaps relating to eyes, nose, skin, throat, feet, etc.	10	20
4. Retaining perfect posture while standing, sitting, or performing any exercises for a period of six months, and receiving a mark of not less than 2 from the leaders		10
5. Bringing evidence from parents or guardians that immediately on arising in the morning, a cold shower, or wet cloth rub, or cold air bath with deep breathing exercises has been for six months practiced regularly at home.....	10	20
6. Presenting evidence of having attended group hikes within four months covering not less than 100 miles, or an equivalent in out-door group activity acceptable to the judges	10	30
7. Giving proof of knowing a scientific health regimen, suitable to your age, covering — (a) A proper diet for three meals (b) Proper sleeping regulations (c) Other essential health rules.....		15

II SOCIAL EFFICIENCY

1. Being a member of one or more accredited school clubs with a record of attending at least 15 meetings for each term	20	
2. Acting efficiently as a leader or an official, or doing some conspicuously meritorious committee work in any club entire term.....		20

3. Knowing the first and the last names and speaking more than once or twice a month to not less than 50 pupils in SPEYER SCHOOL outside of those in your own school year	10	25
4. Proving that you have genuinely helped at one time or another, at least 5 different schoolmates in their studies and habits. (This is the opposite of permitting classmates to copy your home work)		20
5. Work done with any single individual resulting in his marked physical, mental or moral improvement		10
6. Being especially helpful in some definite, responsible way to the teacher, for a period of not less than four months..		20
7. Being active in the maintenance of a voluntary group leading towards higher ideals, mentally, morally, socially or physically in one or more special fields	10	25

III MENTAL EFFICIENCY

1. Having a record of no 4's in any subject (unless just cause can be given) for a period of four months		30
2. Receiving four ratings better than 3 during the previous four months with no rating below 3	10	40
3. Receiving in physical training a mark averaging not less than 2 for 4 consecutive months in alertness and control	10	20
4. Submitting an original set of acceptable essays on school work written at home and not required as school work		10
5. Submitting in writing at least three practical ways in which you think that you have helped, or are trying to help to		40

make Speyer School more interesting or better in any way regarding the courses of study, methods of work, or school administration	10	30
6. Composing a school or class play, song, or cheer which shall be adopted by the class, or school, or writing a story accepted by the school paper	10	20

IV MORAL EFFICIENCY

1. Receiving a mark not less than 2 in "reliability" for the term	20	
2. Receiving a mark averaging not less than 2 in "self control" for the term	20	
3. Bringing absolutely convincing proof, endorsed by parents and teachers showing the maintenance of good habits of character regularly practiced for at least four months at home and in school	10	40
4. Showing evidence whereby you helped arouse the opinion of the class against an individual, or group of individuals, who by actions or words tended towards the setting up of bad practices	20	
5. Writing a digest of not less than 500 words as to what your idea is as to the make-up and practices of a courageous, fair and square self-controlled and clean young man who lives up to the Speyer Creed	10	40

QUESTIONS

1. What new demand upon the public has resulted from the findings of the selective draft in the World War?
2. To what extent may the colleges be blamed?
3. What change might we expect would follow entrance requirements in Bodily Vigor?

4. What Nutrition grades are now recognized and what roughly characterize each grade?
5. What are the chief reported causes of the "Threes" and "Fours"?
6. What specialists are needed to prescribe for these conditions?
7. Why cannot even the teacher of Physical Training be expected to take these cases in hand?
8. In default of a professional diagnosis what nutrition measurements may we take?
9. What interference with our health efforts may be expected and how may this be guarded against in advance?
10. What is the chief value of the teachers' health survey and what points may it well cover?
11. What three ideals or abilities may we expect the teacher of Physical Training to develop?
12. Plan a set of requirements to be set as a standard for pupils who would be permitted officially to represent in their persons what my school stands for?

CHAPTER XIII

TEACHING PUPILS TO STUDY ALONE

In this discussion we have some advantage in the greater definiteness of our problem. We are dealing with children of a uniform age of school development concerned with subject-matter which itself is more or less uniform for the group. And yet the problem is not the one of teaching the pupils how to study even introductory junior high school work, but that of teaching pupils how to study introductory junior high school English Literature, Composition, Introductory Mathematics (Arithmetic, Geometry, Algebra), General Science, a Foreign Language and the other work of the seventh school year in a junior high school.

Of necessity each one of the five major (and two minor) lines of junior high school work has its own peculiar problems to be worked out in a way peculiar to that subject and the best guide for a junior high school teacher would be a set of directions worked out for the various advancing steps of each special subject, week by week. It may be possible that we as teachers will never be really successful in our efforts until some one has worked out for us, subject by subject, topic by topic, the guide we need to help us to make our pupils less dependent upon our guidance and more able to help themselves. No such exactness will be attempted here.

Let us acknowledge that the teacher requires a specialized knowledge of *each separate subject* to make a

plan for teaching pupils to study *that* subject, and that no *general* directions common to all can do more than point the way. Nevertheless, something is gained if we can show even the direction in which, if effort is applied, a greater degree of success can be secured than in the customary ways.

It has been assumed by many that successful self-help on the part of the pupil is, after all, a matter of will power. Some, who have not themselves studied this problem in detail, will assert that *any* pupil can study alone if he only makes up his mind to do so. These people will assert that *laziness* is the chief barrier to be overcome and that when the teacher has established a high degree either of interest or of fear of failure, the pupil will be automatically be able to study with little or no need of outside help. Whatever modicum of truth there may be in this position, it is still more true that those who assume this position are the ones most largely responsible for the enormous percentage of pupils now leaving high school during its earlier years.

In a certain school for one reason or another (pride of rank, fear of failure, special privileges secured, or even a high sense of duty), the majority of the pupils stuck to their lessons until they were satisfactorily completed. A questionnaire distributed among the successful pupils of this high school, and later checked up, disclosed the fact that most of the more successful pupils were working from *four* to *six* hours on their lessons outside of school. Yet no teacher in this school was aware that the total of the daily work assigned called for, from the average scholars, more than half of the time that even the brightest pupils really required for their daily preparation.

In another school the experiment was tried of having the class teachers suddenly and without previous notice

work out themselves the lessons they had assigned to one class for the following day. Each teacher was requested to keep an accurate account of the time required, which included the collection of the necessary books and getting settled for the task, as well as the time actually spent in working out the lesson. Again the results were both startling and enlightening — the total time spent by the teachers themselves approximated closely the time in which the pupils had been expected to do this same work. In one subject the total time required by the *teacher* to work out only *one* of several topics assigned for the next day's lesson exceeded the total time which the teacher had supposed necessary for his pupils to finish the entire work of preparation.

It is not necessary for us to investigate the schools, the dates and the assignments about which these true incidents are related. Almost any school, where no special emphasis has been placed upon unreasonableness in lesson preparation, will give the same result. If each of us will resolve to make these experiments in our own school we will have enough facts to convince us that we have at least one point that needs correction.

To simplify our problem, however, let us assume for the purposes of further discussion that all, or practically all, our pupils are seriously interested in preparing at home the lessons we daily assign. Let us further assume that our pupils are not incapable of the demands of our subject as we understand them. We cannot well ask more than this as a favorable setting for home study, unless we take one further step and ask that each of our pupils be provided with a quiet room alone at home where there will be no distraction or interruption to interfere with his orderly preparation of the assigned work. With all these assumptions (and we know how unreal they ac-

tually are in the average class of average children) if we still find that our problem remains a troublesome one we are at least isolating its difficulties.

Perhaps we can find no better way of creating artificially the conditions we have assumed than to give up for some one period our usual recitation in order that we may devote this time to letting our pupils prepare their next day's work for us in our own class room as we look on. Given this setting, our pupils are to be permitted to work as they please, without interruptions or directions from any source, most particularly without interference by the teacher himself, save, with one necessary modification later to be explained. In order that we may be better able to observe our pupils at study, the lesson assigned for preparation at this special time will have been most carefully worked out in advance by us. We will know its easy and its difficult steps—its essentials and its non-essentials and in point of time required, we will adapt this assignment, for completion, within the period we are devoting to it. Again, we must confess, we will have a set of conditions most unusual in the pupil's ordinary preparation for their work alone.

Now the stage is surely set for successful independent study, but in order that we may follow more readily the workings of our pupil's minds, we must introduce one element of possible distraction. Before our pupils actually begin work we will provide each pupil with three sheets of paper—or one large sheet ruled in three divisions—upon which they may scribble as they study. One sheet will be headed "*Most Important*," one "*Important*" and the third "*Unimportant*" or "*Trivial*."

As each pupil studies, he is requested to jot down a word, a phrase, or a sentence to show how he would classify the various points of the lesson that interest him or

claim his more than ordinary attention. It will be most interesting and instructive for the teacher, if he walks quietly around the room glancing at the pupils' written notes as the period progresses. Finally, let the teacher collect at the end of the period all these papers on which the pupils have been classifying (according to the *value* of each), the facts or processes they have been studying.

It will now be our task to go over by ourselves alone the lesson assigned for the period just completed and to classify just as the pupils were asked to do, the various elements of the assigned work upon our "Most Important," "Important," or "Unimportant" pages as the case requires.

Comparing finally the pupils' total work with our own — and supposing our own classification to be the correct one — which we must admit is not always the case — we will have the basis for finding out the ease and accuracy with which our pupils went to the heart of the problem we had set them. Unless our school be one in a hundred — a school where our pupils have long been trained to study by themselves — a school where teaching how to study has been a most important part of each week's work of instruction, we will all, whatever be our subject, find approximately the same results.

By and large, we will find that facts we consider "Most Important" will appear in the pupils' classification as "Trivial" about as often as they appear in their true place. Trivial things will equally appear classified about as often as "Most Important" as in any other division, while "Important Things" will be more or less equally distributed in the three classifications. If we are in doubt as to our findings, we may try the test again and again with other classes or with other assignments. Unless our classes have been specially trained, the results will be

astonishing. Varying slightly with the native ability or inherited intelligence of each pupil, our general results will not differ greatly from a chance distribution, as one might deal a pack of shuffled cards face down into three piles.

To that degree which any pupil is found repeatedly able to approximate the teacher's (the correct) classification to that degree the pupil may be said to have learned how to study alone. From these and from subsequent similar tests the teacher may secure a rough, but nevertheless significant measure of the extent to which any pupil may have learned to work independently of outside help.

Should anyone remain unconvinced of the truth of our contention that the pupil's total inability, without training, to distinguish essentials lies in the heart of our difficulty, this further experiment is proposed.

Under the same conditions as for the previous tests let the teacher arrange a list of from ten to twenty brief statements taken from the work that is proposed for home study. These facts should be taken in sequence from the proposed work without regard to their importance, taking the insignificant and significant facts in order as they may come in the text to be studied. The pupils, with their three sheets, "Most Important," "Important," "Unimportant" before them, are asked to classify the facts as they are slowly dictated by the teacher. The pupils' results, when tabulated, are then compared with the teacher's subsequent classification of these same facts.

Now if these tests show us nothing else than to let us see how hard it is for the untrained children to do the things we consider simple and easy, they will have served a worthy purpose. But these tests should have done

still more. By means of these tests we should become convinced that the barrier to satisfactory home study lies primarily in neither a lack of interest nor a lack of industry, but first of all in the pupils' almost total inability to distinguish the essential from the trivial until he is especially trained to do so.

Will we seem too depreciatory of our own work as teachers if we admit that the chief barrier to a school boy's learning how to study is the teacher's own failure to appreciate the difficulties of the work he assigns for home preparation.

Assuredly by the old method of rewarding those who, largely by chance at first, hit upon the essentials in their preparation, and by punishing in various ways those whose chance selection fails to meet our approval, we will gradually teach our pupils how to study. But what a blind and wasteful method, after all, this is. How much better it would be if we could make our pupils' efforts more productive of results from the start. Such a change if it comes will come first through a change in the teacher's own attitude toward the work he assigns. If one's pupils are to be taught how to study, the assignment of home work will at once be that part of the teacher's work which will *most of all* require skill in preparation. The surpassing teacher's superiority will not be established by his conduct of the recitation, but rather by the judgment, foresight and painstaking care, with which he assigns the daily task his pupils are supposed to work out alone at home.

If, for our guidance as teachers, we were to enumerate in sequence some of the steps necessary, if our pupils are to study by themselves, we might well begin with *establishing the reasonableness* (the usefulness to the pupil) of *the major subject itself*. If the subject of study

is history, we must take the time to convince our pupils that from every viewpoint *the study of history* is the most valuable subject that could be selected for that fraction of the pupil's school day which it is assigned on the school program. We must not be so unfair as to attempt to persuade our pupils that history is the *one* subject worth studying, but we must convince him that no other subject, whether offered for instruction or not, could possibly secure for him the peculiar benefits that will follow his study of history. Other subjects may be equally important, but if history is omitted the pupil will lose something that no other subject can hope to supply. As has often been repeated, it is the junior high school teacher's business to take nothing for granted unless it be the pupil's deep-seated aversion to the teacher's specialty. Each pupil must be won over to the reasonableness of the study of history and must be supplied with arguments to defend the reasonableness against all comers.

As a second step the time element may be considered. Each teacher knows, or should know, that his assignment is not the only one to be prepared at home by the pupil the coming night. Not less than three, usually four, lessons will need the pupil's attention every evening. We all know and possibly all despise the teacher who seeks to establish the importance of his subject by assigning as "absolutely necessary" a lesson for home preparation that will require every minute of the pupil's total time. Except for the subjects that may require no home preparation at all, as shop work, sewing, drawing, music, it is but fair to assume that each subject is entitled only to that part of the pupil's weekly home preparation that the subject itself is granted in the weekly time schedule of the school program. If a subject is granted one fifth,

or one seventh, or one twelfth of the weekly school program, its right is established to the same fraction of the pupil's home preparation and to no more.

A principal who wishes to make this second step in home study successful can do no better than to call into conference in turn all the subject teachers of each class, leaving to these teachers the problem of working out a daily schedule for the week's home study. A gentlemen's agreement as to the home work each teacher may claim on any certain day is better than a peremptory order allotting the time allowance for each subject's daily preparation.

However, the main thing here is to have the home work in each subject so reasonable in its time requirement as to remove on the one hand the repugnance to study that an unfair assignment may awaken in the mind of a full spirited pupil, or, on the other hand, the theft of energy and time from relaxation and play that the too industrious pupil may suffer.

So far we have taken *two steps* in teaching pupils how to study and these two steps appear to have been taken for the one purpose of making the proposed home study of our pupils more reasonable *to them*. The subject itself is established as worth the pupils' study and the time allowance is reasonable (to the pupil) in amount. Yet unconsciously to ourselves, perhaps, we have been making two advances in teaching our pupils how to overcome the one superlative barrier to their home study alone — their inability to distinguish essentials from non-essentials in the work assigned for home study.

In so far as our pupils understand the reasons for which they are studying *history* (to continue our example) and so to a degree the necessity for the particular assignment on which they are working, and in so far as

they realize that what is assigned must be given a certain definite and limited amount of serious attention, they are provided with certain criteria for judging the relative value of the various facts which the home lesson presents. While we have been apparently humoring the pupil in his attitude of having to be convinced we have in reality been giving him step by step the very training he needs in order to study our subject intelligently alone.

While we may appreciate the training that comes from establishing the reasons for studying the subject, the training that comes from definite time allotment may not have been recognized. The time element itself gives the pupils a basis for the selection of essentials. Given a certain definite amount of time for a given lesson, the pupil, whether he be assigned a single sentence, an example, a page, or a chapter, has some definite standard for judging the degree of thoroughness with which he is expected to acquire the facts in question. If the pupil is given but a paragraph it is reasonable for him to judge, other things being equal, that every part of that paragraph is important, though some parts may be especially so. Similarly, if a chapter be assigned, the pupil must know that he cannot be expected to memorize the entire chapter in the time allotted, but that he must quickly try to find within the chapter those points which transcend all the others in importance and to center his attention upon them.

The teacher then will not preface his assignment by saying, "The lesson I am assigning for your study to-night is a particularly difficult one," or "This will prove an easy lesson to prepare," because he will so apportion his assignments as to make them all approximately equal in difficulty. While we recognize the added work this places on the teacher, it is wholly unavoidable if we

are to realize our aim. After all, we junior high school teachers cannot hope to escape the real burden of doing things that no other type of school has yet done, or at least has not done well. As pioneers we will, however, have the joy of exploration and discovery far outweighing our discomforts.

If the first step is to establish the reasonableness of each study as a whole, and the second a reasonable period of preparation, the third step for the teacher is to establish the reasonableness of each lesson as it is assigned. This is no simple task. It adds, apparently, no light burden to the teacher's work. It is so much easier to say, "Study the next five pages"; "Prepare the next ten sentences"; "Work out and hand in the next ten examples," than it is to stop and carefully explain the reasons for the assignment as it is announced. Teachers who pride themselves on being almost over-conscientious in their work have for years been content to say, "Your lesson for home study is written on the blackboard," believing that in writing down the assignment they have fulfilled every possible moral obligation toward the pupil.

However, from the standpoint of teaching the pupils how to study, even the written assignment (with time provided in which to copy it down) fails entirely of establishing what must be our third step, *convincing the pupil of the reasonableness of the assignment itself*.

If we are to hold our pupils to account on the work we assign for home study, we must be positive that both we and our pupils know exactly what is expected in this period of self-preparation. In so far as our lesson assignment is vague and indefinite, just so far do we deprive our pupils of any fixed basis for judging relative values.

Supposing that the pupil is truly eager to prepare his work and that he thoroughly appreciates the importance of the topic assigned, still we may leave him floundering in a slough of despond unless we make our home requirement from this lesson, so definite that there can be no misunderstandings on the pupil's part, when he studies to-night alone at home, nor on our part, when he meets us tomorrow in the class room. An oral assignment hastily made at the close of a period, can scarcely be expected to make an impression that will endure until the time, hours afterward, when the pupil may sit down to work that assignment out. Few of us, grown men and women, would try to carry in our minds four separate and exacting sets of directions for tasks we were to undertake some hours hence. Even such brief notes as we might jot down would be insufficient. We would ask, and expect to receive, exact and explicit instructions if the tasks were themselves exacting. "Oh," some one will say, "the pupil is expected to use his judgment." This is exactly the point. Until the pupil is trained he has no judgment which he can use. In order to make him a judge of essentials, he must be trained and the *first* training is in recognizing the essentials which we pick out. Gradually, the pupil will learn to pick out the essentials for himself, but in beginning the junior high school work (as now in beginning the four year high school work) the pupil must have the essentials picked out for him, by the teacher who assigns the lesson for home study.

Therefore the lesson must be definite — such guides as may be necessary for the home study of that lesson must be actually written down — the assignment itself must be copied from the blackboard in the exact words of the teacher and enough time must be allowed to make

sure that every pupil has an accurate copy. Indeed it might be well at the very outset for each teacher to make a classification of the lesson points such as we used in the trial tests described earlier in our discussion and to make this classification a part of the blackboard assignment which the pupil will copy in his "For Home Study" note-book.

Just as soon as we see evidences of our pupils' increasing ability to pick out essentials for themselves we shall, of course, cease little by little to pick out the essentials for them and so give them an opportunity to exercise the judgment which we are teaching them to develop. However, at the outset — for beginners — and it is beginners that we have had in mind from the start — we must err if at all upon the side of too much, rather than too little, guidance in the preparation for home study.

QUESTIONS

1. Why is not teaching pupils how to study a general matter instead of a special matter for each separate subject?
2. What amount of time do my most successful students spend over their books?
3. Have I ever tried the experiment of doing myself the home work I assign? With what results?
4. What two experiments may I try in my class room to show me how my pupils study alone?
5. What were my results for each experiment?
6. Do I know how to study? How did I learn?
7. What is the first step in teaching my pupils how to study my specialty alone?
8. How may I decide upon a reasonable time requirement for each separate day's home study?
9. How does the time requirement guide a pupil in how he should study at home?
10. What is the third and last step in teaching my pupils to study alone? Why is it so important to the pupil? Why is it so difficult for me?

CHAPTER XIV

THE PROJECT METHOD OF INSTRUCTION IN THE JUNIOR HIGH SCHOOL

When mature men and women undertake the study of any special subject whether it be some difficult business proposition, or a topic on which they seek enlightenment by serious reading, they have, as a rule, a very definite purpose in their work. So, too, young men and women pursuing courses in colleges usually have a more or less clearly defined purpose in view—which may be as general as the preparation for a profession or as special as the mastery of some problem in one of the studies they are pursuing. Even in the later years of the high school, boys and girls may work with a definite purpose in some or all of their selected subjects.

However, when one considers the motives that govern early adolescents in their school work, one has difficulty in discovering that they have any serious purposes at all to guide them in their work. For the most part children of junior high school age “go to school” because the law requires it and their parents insist upon it. Others may go because they enjoy being with children of their own age and since their playmates go to school they want to go also. Repeal, however, the compulsory education laws, remove parental control and what a drop in our school attendance would immediately result! Later some of these very children whose natural inclination at twelve would be to keep as far away from

school as possible may study willingly far into the night and gladly forego all sorts of creature comforts if only they be permitted to continue their education. More than one boy now ungrudgingly laboring at all sorts of menial tasks to work his way through college, had to be driven to his school work in early adolescence.

To more than any one other factor this change in attitude toward school work is due to the acquisition of some purpose in the youth's study that was wholly lacking in his earlier years. If junior high school pupils for the most part enter upon their work with no purpose higher than avoiding the consequences of disobedience — and later acquire purposes that may keep them eagerly at school work even to the university, it becomes our duty as junior high school teachers to supply worthy purposes for our pupils if possible from their very start with us.

Since we aim to help our pupils "to do better those worthy things they will do anyway," we can scarcely furnish greater assistance than by helping them to gain what most of them have not when we receive them — a worthy purpose in their school work.

Other things being equal, the more distant and general the purpose — as preparing to be an intelligent, educated business or professional man — the higher and more powerful the influence which this purpose will exert upon a pupil's life, but however much a youngster of twelve may think he wishes to realize such a distant aim, the difficulties and abstractions of his daily tasks will often prove too discouraging to make the distant goal an ever present help in time of trouble.

The project method is merely a name that has been given to a plan of teaching by which each teacher in his subject attempts to supply *immediate* purposes which

will make the daily and weekly work really interesting because from it the pupil will get something—information, skill or power, which the boy wants or can be led to want *at the very time* this subject is being studied.

Those who most enthusiastically support this new (yet centuries old) method of work, maintain that children come to school or are sent to school, as much to get purposes in their intellectual work as to get information from books or from teachers. Therefore they maintain that the teacher who can instill facts, but who fails to develop worthy purposes along with facts, does only half the work for which he is engaged.

From our position as moderate progressives we will find it difficult to avoid agreeing in part with the proponents of the project method when we realize that pupils if they study at all must do so with some purpose in mind even if it be only that of escaping punishment or pleasing the teacher. We must agree that in so far as the pupil's purpose in his work is to gain information which he really wants for and by himself, without compulsion from without, we have raised the moral and intellectual level of the child.

We may be teaching our specialty because we like it, or because we found it easier to get a license in that subject than in some other, but we more rarely have given serious thought as to why our subject should appeal, if it does at all, to the little children we instruct. For most of us it is enough that our subject is "required." The pupil must do satisfactory work to be promoted (he knows that and so do we,) why distress ourselves with further difficulties?

Elsewhere, under "Teaching Pupils How to Study Alone," we have discussed the value of sending children from our classes with some real problems which they

may work out at home. The project method merely brings these same problems into the class rooms and makes the statement or re-statement of an acceptable problem an essential part of each day's work.

If we would work with the highest success, the teacher of each subject must not only be an expert in the subject-matter he is engaged to teach, but an expert in the *purposes* of the work he daily plans for his pupils. Such a requirement may indeed be too high for our immediate fulfillment, but if we recognize that this intimate acquaintance with the *purposes* of our work is a desirable goal, we have made an undeniable, forward step.

We may be able, perhaps, to work out one big purpose for all the work in our subject for a school grade and fail to discover purposes for some of the topics we require day by day. Even at that, we have made progress, provided that this one purpose is thoroughly understood by our pupils as well as by ourselves.

Gradually as we repeat our subject term by term we may inject here and there a purpose that makes our pupil's work to that extent more interesting and attractive. So we strengthen our work as teachers not by a single cataclysmic change, but by a gradual increase year by year through careful, thoughtful, pains-taking study of the purposes of the work.

Let no one think that such a progress toward professional skill of this high type is ever a simple or an easy matter. No matter how sure we may be that the purposes we have worked out are worthy ones, they fail entirely of their value in our work if *we alone* recognize these purposes as worthy. To be of value in our project method the purposes we propose must appeal to our pupils at least as strongly as to ourselves. An imposed purpose even though it may seem wholly rational to us

as teachers, fails utterly of its value unless the pupils of our class accept and appropriate it as their own. To require a child to memorize a purpose, which he does not of his own free will accept, simply adds another burden to the youngster's work and makes his work and ours more difficult when it should have been made more easy.

At this point we stop to appreciate why a teacher who "understands children" is often a greater acquisition to our school than a teacher who understands only his subject-matter. The teacher understanding children is far better able to discover purposes which will appeal to them and which they will accept. No matter how expert in his specialty the teacher may be, no matter how thorough his scholarship and his acquaintance with his subject-matter, unless he can also put himself in his pupils' place and work out purposes that appeal to *his pupils*, he will fail not only in the project method of instruction, but indeed in his real usefulness to the school in which he is employed.

In so far as some teachers in the senior high school typify, as we must admit they not infrequently do, the type we last described, to that same extent they furnish in their persons as well as in their work, arguments for recruiting our secondary school teachers from the more expert workers in the grades below.

The junior high school is in a peculiar position of advantage in being able to avail itself of the services of teachers who, understanding children through previous elementary school experience, have later perhaps become eligible for promotion through an acquired knowledge of the subject-matter that they are now called upon to teach.

And yet in neither extreme is the best teacher found. Even though the advantage in using the project method

may lie with the teacher who understands children, the best teacher will always be he who understands both the pupil and his subject. If we have raised an issue here, it is chiefly to emphasize one phase of the project method overlooked. The teacher must not only, through his intimate and thorough knowledge of his specialty, be able to discover worthy purposes for his daily work, but he must equally through his intimate and thorough knowledge of children and child-mind, be able to induce his pupils to accept as their very own, the purposes he proposes.

Stripped of all explanations and illustrations, the project method in its complete adoption proposes to carry forward the work in each subject, by placing before the children who are studying that subject a series of carefully planned purposes or problems, which the skillful and sympathetic teacher leads the children to accept *as their very own*.

The very antithesis of the project method of instruction is the assignment without word or comment of "the next ten examples" "the next ten sentences," "the next ten facts," "the next ten pages." No question is raised, no problem is at issue—the task is set; that is enough.

On the contrary, the very acme of the project method is the proposal by the teacher and acceptance by the class of a project, or a problem whose successful completion compels the pupil to acquire the information or skill desired by the teacher while enticing the pupil to work earnestly and of his own free will toward the solution which he in turn eagerly desires.

"Teaching Technique Adjusted to the Project Method" was the subject of a talk by Professor Frank McMurray before the Alumni of Teachers College recently. The

following are in part Professor McMurray's suggestions:

Children come to school to get purposes, they do not come with purposes ready made. The teacher of each grade must be an expert *in the purposes* of the work of her grade. These purposes must be thoroughly understood by the teacher who must by her sympathetic understanding of her class induce them to accept as their own, worthy purposes to hold them to their school work.

Teachers need to know why each subject receives its place in the curriculum and why it appears as it does in the plan of her grade.

There may be one big purpose for all the work, but there will be many minor purposes which may cover only a part of one subject, even only a few days' work in that subject. These minor purposes which hold the pupil willingly to his work for the day or week may be called projects. Finding a worthy project which the class will eagerly adopt is the first big problem in teaching by the project method.

The second step is to secure an active self-expression and creative effort on the part of the pupils. It is a mistake to think that we need many projects in action at the same time. A project for each pupil would be a bad plan even if we could furnish each pupil a separate teacher. Pupils need training in coöperative effort. They must be trained to help each other as well as to help themselves. A recitation under the project method is a report of the committee at work on that project—usually merely a report of progress with the progress outlined and checked up.

The teacher's work is to correct errors that will creep into this report and to show the pupils the easiest and best way to get the material for their next report.

The finished report of the class may be finally sum-

marized by the class and the teacher — for the purposes of record and review.

Two good projects illustrating the principles enumerated, are quoted from Professor McMurray:

1. For the eighth year arithmetic, "How best could I invest one thousand dollars?"

This requires knowledge of stocks and bonds — of interest returns on market values — of the relative values of certain types of investments — of savings banks and compound interest and indeed of a large fraction of the work now covered in the eighth school year.

2. For the fifth year geography, "What could I observe on a leisurely trip by rail, boat or auto from New York City to Duluth, Minn?"

This arouses an interest in the topography, agriculture and industries of the region covered. Thus pupils learn the usual geography of this region in a new and unusually interesting way.

The concrete examples taken by Professor McMurray from the arithmetic and geography of the lower grades may serve to suggest similar possibilities in our own specialty, but it is hardly within the scope of our present discussion to lay out a series of model projects in the various subjects of instruction. Our aim here is simply to show the necessity of finding projects, if we are really to accomplish the best results of which we are capable.

Possibly it may seem to require an inventiveness which we do not possess to link up something in which children may be honestly interested, with the topic we may be obliged to teach. Right here the extremists will proclaim that those who cannot find worthy pupil-projects for their work should not be allowed to teach at all. Indeed there is an increasing number of students of teaching and supervision who would make this ability to establish the reasonableness of each teacher's specialty

the basic requirement in licensing all junior high school teachers.

Without taking this extreme position, though it is to an extent a defensible one, we may be permitted to close our chapter with a discussion of one concrete suggestion that all teachers may find valuable.

The point of beginning for a worthy project is not, as it might seem, the topic which we wish to teach, but, instead, the things our pupils are now interested in doing or learning to do. We must be opportunists to a marked degree, in that we must seize upon those worthy interests which the school life, the newspapers, the local adult interests make predominant interests in the children's minds for the time. Find, if we can, what the majority of our pupils in each class are most interested in at the time our new topic is to be taught and then study the point, or points, where this interest may be led to reach the new topic we must teach.

Right here the proponents of the old "study because it is your duty" type of teaching will take issue with us because we will be accused of a sort of mental trickery in stretching the pupil's present interests to reach topics that may seem very foreign to them. To a certain extent, these objectors may appear to be justified. They themselves have never given much thought to the possibilities of joining pupil's interests with the topics they have been in the habit of teaching and so, failing to recognize any connections, they assume that none exist. The discoverer of alleged connections is accused of simply fooling the pupils and therefore is to be vigorously condemned.

A careful analysis of the situation will, however, convince us that even the objectors to our project-teaching have been project-teachers themselves, did they but know

it. The project that these "study because it is your duty" teachers have been all unconsciously proposing to each succeeding class, is a project which, if stated in the pupils' words, might often read, "How can I avoid a failing mark in _____?" or "What must I learn about _____ to avoid some kind of punishment from the teacher?" The newer project-teaching merely plans to substitute a project based on information which the pupil may be led to desire *for himself*, rather than upon information which the pupil feels that he needs only to escape the teacher's censure. Our newer plan finds nothing to apologize for in establishing connections which the older plan has overlooked, or perhaps, has never looked for.

It is to be presumed that every topic in every subject taught in the junior high school will be taught because it has some other purpose than of giving the pupil the basis of school "marks" and school "promotion." If ever a topic can be found that bears no relation whatsoever to "those worthy things our pupils do anyway," then we have the strongest possible grounds for its total rejection as not being "material in itself worth while." However, we would do well to hesitate before condemning any topic because we ourselves cannot, at first, see its connection with the pupils' present interests. On the contrary, we may do best by assuming that a connection exists, if we will but make a serious study of the situation.

For the consolation of those who feel the task too difficult, may we not say that others in the same frame of mind have worked out solution after solution until they were able finally to make practically all their work appear reasonable and interesting to the pupils who were asked to study it, by starting with things the pupils really wanted to learn.

As a starting point may we propose a project for those of us who have been convinced that our pupils may be led to study because of the added information, or power, they themselves really desire at the time. Let us give our pupils a sheet of blank paper upon which each will be asked to write three or four things he himself is honestly most interested in learning more about right here and now. After we have tabulated our results, let us take them home and compare these topics which the pupils propose, with those topics that our work requires us to teach. Perhaps we shall be obliged to ask for assistance from many others but be assured, in the end, we shall find *some* connections between the two. Upon these connections we may then base our class projects, being assured, however slender our connections may be, that we have made some progress in the right direction.

In our discussion of the Socialized Recitation which follows, we may get further help in finding ways and means of utilizing—not one interest and so one project for our entire class—but in using some projects that will appeal to certain of our pupils and other projects that will appeal to others, thus simplifying our difficulties and yet achieving the desired results.

QUESTIONS

1. What do I understand by the "immediateness" of project teaching?
2. Why should I make a study of the reasonableness of my specialty to the pupils I teach?
3. What worthy deferred purposes can I propose for students of my subject?
4. Why cannot all worthy immediate purposes be also planned in advance?
5. Why is the finding of worthy immediate purposes so difficult?

6. What advantage here has the teacher who understands children, over the teacher who only understands his specialty?
7. How can I train myself to find worthy immediate purposes for my pupils?

CHAPTER XV

THE SOCIALIZED RECITATION IN THE JUNIOR HIGH SCHOOL

A few years ago the socialized recitation was heralded as a most desirable innovation in school work. Today one hears less of it as a distinct classroom method and yet the very publicity given to this proposed improvement has left its mark on all class work in the better type of schools. In those institutions beyond the grade of high school where teachers have been given their education, in the colleges especially, the predominant type of instruction has been, and to a lesser extent still is, the lecture method. Students were expected to come to their college class room with notebooks, pads, pens and pencils, and to sit in silence for an hour, taking such written memoranda of what the professor said as seemed to them most essential. The professor's part was to give all the information, to do all the talking. The student's part was to sit, quietly attentive, absorbing and remembering what he could of the information that the professor laid before him.

No one has ever maintained that this lecture method was a desirable type of work for younger children, but, nevertheless, as more college men and women entered upon the work of teaching there was, perhaps, unconsciously, more and more of the lecture method injected into high school instruction and it even began to work its way down into the elementary school grades.

To bring the situation squarely to the attention of students of good teaching, one or more deeper investigators devised the scheme of taking stenographic reports of scores of recitations selected at random in several schools. The published results of these recitations disclosed a situation that was at once recognized as well nigh universal, as well as highly undesirable. By and large, it was found that in the average upper grade class room the teacher did from three-quarters to nine-tenths of all the talking—or conversely, that the children were permitted to take an active part in their own classroom education for not more than one-quarter of the time—usually much less—while for the remainder they were supposed to sit still and “absorb” what the teacher was attempting to disclose or explain. Pro-rated equally among the pupils of a junior high school class of thirty-five children, it would mean that in a recitation of forty-five minutes any one individual pupil would be allowed no more than twenty seconds for his individual speaking part in that class gathering.

On the same basis, for the four or five daily recitations attended by each pupil in a junior high school, each pupil would receive, as his own individual and peculiar opportunity to express himself, a maximum of less than two minutes, often less than one minute, for all the recitations of an entire school day.

As a matter of fact, we know that some pupils always take much more than their proportionate two minutes, but we also know that there are always more who take absolutely no part at all in many recitations on many days.

To meet the objections so evident in recitations of the customary type where the teacher had the only speaking part, it has been proposed to turn over the recita-

tion to the pupils who, under the teacher's skillful guidance, should themselves propose the questions other pupils were to answer and, through a chairman of their own, were to reverse the time ratio giving the pupils more than three-quarters and the teacher less than one-quarter of the class time devoted to oral work.

In voluntary gatherings of adult citizens where men or women meet "to do business," whether in clubs, societies, or business groups, it is customary for all who are interested, or informed, to take some part in the discussion and for each from his special viewpoint to contribute as much as he is able to make the joint decision a wise and profitable one. When special provision is necessary, to gather information which is not at hand, committees are appointed and their reports are heard at subsequent meetings. So the group "does business" by pooling their experience and their intelligence to the end that each one in the group benefits by the combined wisdom of all. Furthermore, each one, even though he be voted down, is a co-partner in the enterprise or undertaking; his part counts for something worth while to all the others, even if that part be nothing more than to say "aye" or "no" when the final vote is taken.

If school life is to be in any real sense a preparation for life outside the school—and still more if we consider school life, to be not a preparation for life outside of school, but a real part of it—there is need for revising the customary school room practice to make it more natural and, indeed, more civilized by giving the pupils in their various recitations an opportunity to approximate, to some extent at least, the methods of "doing business" which their grown-up friends use when they meet voluntarily in organizations outside the home.

The socialized recitation in its extreme application

may present a more or less accurate copy of a study-club of adults. Under the astute guidance of a teacher of most unusual ability, such a class recitation may appear to run itself. Some pupils propose propositions which others discuss, evaluate and decide; all the pupils are self-active, all are eager participants. The teacher, though present in person, seems absent so far as participation in the class discussion is concerned. One can but be tremendously impressed by witnessing such a recitation where everything possible under the older methods of work is secured and, in addition, so much animation, life and enjoyment are manifested by the pupils, whose previous part had been only to sit still and listen.

If, however, we are to look behind the curtain, we may discover a high degree of artificiality in all that apparently took place so naturally, before our eyes. We might find that this socialized recitation which we have witnessed was most skillfully planned in advance, almost as one might stage a play — that each pupil was trained to do his special part and that this single recitation took hours of preparatory work on the teacher's part to make it the success that we observed. Many of us may have witnessed prepared recitations where the whole truth might be not far different from the one just described.

Critics now may maintain that our pupils do not meet in their class room with their teacher on an equal footing — as do men and women who gather in voluntary groups, but that the class room more nearly approximates the conditions in the pupil's home where mother and father rarely call committee meetings of their children to decide what is best for them to eat, or to wear, or when to go to bed. It may further be con-

tended that if children were able largely, if not wholly, to conduct the recitations themselves, we should not need trained teachers to teach each class, but only one super-teacher to plan tasks for each recitation group within a school.

We have then two extreme points of view with contentions of undoubted validity at each extreme. In our junior high school we have, as a rule, pupils who are better able to judge for themselves than are their younger brothers in the elementary school, but who are still far from adult intelligence in matters of information and judgment. To expect these children to conduct their own recitations without more preparation and training than the average teacher is prepared to give, is an absurdity that answers itself. On the contrary, we may find it just as absurd to expect these children to be best educated by a process which regards them as sponges to soak up the stream of knowledge, large or small, which the teacher pours forth.

Taking a middle ground in the junior high school we may grant that the pupil should at least be permitted to express himself daily in his recitations whenever, in the teacher's judgment, such an expression may help the work of others in his class. It becomes the junior high school teacher's duty then to be constantly alert to the possibility of securing genuine contributions from every pupil for the advancement of the class lesson. A teacher who has the better point of view will never tell a fact, or explain a process, which some pupil, under guidance and with slight assistance, can tell plainly in approximately the same length of time.

To this extent at least, we will agree that every junior high school recitation ought to be "socialized" by making it incumbent upon the teacher to consider his class as

a group working with him toward a common end—the appreciation of some new question, proposition, process. To the same extent the teacher ceases to be a superior, a lecturer, and places himself more on the pupil's own level in order to work with him for a common purpose rather than to work *at* him upon a task in which the pupil may have no sincere concern.

Instead of expecting each pupil simply to listen to, and absorb, the wisdom of the teacher, we should expect each junior high school pupil to be constantly alert to contribute something which will make *the progress of the class* more rapid and more sure, toward that complete understanding of the lesson which is the aim of the socialized class. The pupil now may be expected to raise his hand, or claim the floor, not to show that he individually has grasped the point in advance of others, or not to show the teacher how much "smarter" he is than his fellows. On the contrary, if a pupil now asks the floor, it will be to offer some suggestion, or to give a point of view that will help his classmates to learn what he believes will help them to secure a better appreciation of the topic under discussion.

Pupil help in class room instruction, however, must not be confused, either in the teacher's, or the pupil's mind, with that blurting out of information which robs the one who has the floor of the right to make his own contribution. The over-smart, or over-impulsive, pupil who wants to answer every question, or explain every difficulty, must be led to see that he is, however unintentionally, no better than a thief if he robs a classmate of his opportunity to make a personal contribution. When contributions are asked from volunteers the brighter pupil's opportunity will come, but when a fellow pupil has the floor he must respect him as he himself would hope to be respected in a like situation.

Similarly, while it may be both fitting and proper for two or more pupils to work out their home assignment together, and much may be said for the value of such coöperative effort, especially when all the partners are on the same intellectual level, still this must not be confused with lending home work, that a less industrious, or more selfish, classmate may copy it and present it as his own. Just as it is unfair for one pupil to steal another's contribution in the class room, it is equally unfair to pauperize a classmate by depriving him of that training in self-help which each one in the class is supposed to receive by home preparation of assigned tasks.

The boy who can be led to see that the habitual lending of his prepared written work weakens rather than helps his friend and makes his friend more and more a helpless parasite, will be less ready to harm his friend by appearing to help him. Even the would-be borrower, when he has to present his results to his classmates rather than to his teacher, may feel somewhat differently about sailing under false colors. In school-boy ethics it may, in some sections, be fair sport to deceive the teacher, but there are few localities where constantly tricking one's fellows is ever given the continued approval of the gang. Indeed we may hope to have our pupils accept to a greater degree than before Polonius' advice "Neither a borrower nor a lender, be."

So it is that a proper conception of the co-partnership of the class in the business of getting an education may extend and should extend beyond the class room door in its influence on the pupil's character as well as upon his progress in school. Our improvement in method is surely ethical, but it is more than that.

As high school teachers are often heard to say, regard-

ing difficult steps in their own specialty, "I never really understood those steps until I began to teach them"—thus giving voice to the truth that by helping others to appreciate we often appreciate more fully ourselves, so high school students by being given an opportunity in the class room to help each other may be permitted to gain that same better insight, or higher appreciation, that comes only through actually assisting in the teaching of others.

Indeed if once we, as teachers, set as our aim the withholding of any information which the class may contribute without too great loss of time, we may then be led to go even farther and begin to believe that we should give no instruction in the class room that some pupil, or pupils, may give for us without greatly delaying the class progress.

Let us confess that the great barrier of letting our pupils do all they are able, in our recitations, is the element of time. Skilled as we may be in the work at hand, familiar as we are with the steps in the process, knowing as we do in advance all the difficulties of the lesson, we may well hesitate to delay the class progress by asking contributions from those infinitely inferior in information and training.

Is it not better for us to go ahead explaining (lecturing if we must), laying the whole matter before the class, in a manner so manifestly simple that all have but to attend in order to comprehend? In the past the customary answer has been, "Surely. Teach, tell, explain; that is what you are paid for." Yet the results in the past have not been so surprisingly superior that we are led to believe there can be no improvement. No matter how skillful may have been our presentation of a new topic we have been perennially surprised by the large number

who always showed in their written reviews that they had not remembered our presentation, even if they followed it at the time. Might we not, on the whole, have been saved the time we spent in going over a presentation a second, a third and even a fourth time, in order to make it carry over, if we had given the pupils themselves a hand in that first presentation?

After all, it is not the educational feast we place before our pupils that nourishes them, but rather what they accept and assimilate that strengthens their mental make-up. From time immemorial horses have been led to water, frequently with disappointing results. We know that it is equally true that we may lead our pupils to information without being able to make them think. However, if that withholding of thought by the pupil ceases to be a matter of his individual loss, but rather a barrier to the progress of his fellows, the normal good-willed boy or girl becomes alive to a new pressure that may gain results where the selfish appeal might have failed.

Not only in development lessons where the matter under discussion is presumably new to the class, but even more in review lessons where the topics have been previously discussed and explained in class, is teaching through the pupils a most valuable aid to progress.

For example, instead of merely assigning a certain topic for review at home to be tested by the teacher's questions on the following day, let the teacher request each pupil to write out and bring in five or ten questions suitable for the review that is planned. Further, let it be understood that each pupil who proposes a question to his classmates stands ready to supply, whenever necessary, the correct answer himself. Working at the blackboard, the teacher calls on a pupil to read his best ques-

tion. The pupil reads his question and may be called upon to explain, without answering it, why it is a good question. Class criticism may be invited for a moment and the class may even be asked quickly to vote by a show of hands whether the question is acceptable. If, with the teacher's approval, the question is accepted, it may be written on the board for all to check off on their own lists, or to copy down if they have not brought it in themselves.

Then the question may be put to a pupil of his own selection by the boy who brought it in—passing the question from boy to boy until an answer is secured that meets the questioner's entire approval. Other boys who had prepared the same question and answer may be called upon if necessary to bring out a more perfect exposition.

So it may go throughout most of the recitation or review—the pupils, aided by the teacher's censorship, proposing and answering their own questions.

Even for a written review, the pupils may hand in a set of proposed examination questions from which the teacher may select those for the day's review, adding to them or revising them, usually with a word of explanation, as the necessities suggest. Thus the final questions as they appear on the blackboard may be largely, if not wholly, the pupils' own creation—not a task set by the teacher, but a test set by the pupils themselves.

By this very method of selection the class becomes more eager to hand in creditable answers—the presumption of reasonableness being to the class inherent in a set of questions which the class itself proposes. The attitude of antagonism to the teacher's alleged lack of sympathy or understanding in setting the test is largely changed to one of willing coöperation in the effort to

secure good results for the class that has set its own examination.

Added to the new spirit of willing coöperation, comes an increasingly better ability on the part of the pupils to ask good questions and to answer them. As in Chapter XIII we saw that a recognition of relative values is studying, we see here how through the "socialized" question paper the pupils are trained to pick out by themselves the essentials that are worthy of being made the subject of questions on their class tests. Indeed some may go so far as to say that the questions that a pupil proposes as proper ones for a class review test are a better test of that pupil's fitness to progress than would be his answers to the teacher's questions. However, we need not go so far as that, to be convinced that good pupil-questioning is a very potent help in class room teaching. We must, however, be willing to admit that in so far as we have failed to encourage and to train our pupils to propose good questions, we have failed to make use of a very valuable aid to the teaching of our specialty.

As we experiment with giving our pupils a chance to teach each other, under our guidance, we will become more and more convinced that the bug-bear of slow progress is not as terrible as it at first appeared. Even if as a result we actually cover less ground, we find that at least the ground we do cover is unquestionably more secure.

In some subjects we may find it worth while to have a pupil chairman quite regularly for our class work, but the elaborate paraphernalia of a socialized recitation is not necessary for the success of our idea. The show recitation may never be staged in our class room, yet if we grasp the newer point of view our pupils are bound to be benefited.

Were we to try to give in a single sentence the essence of our newer conception of the teacher's class room creed it might be stated in these words:

IT IS MY FIRM CONVICTION THAT EACH PUPIL IN MY VARIOUS CLASSES HAS AN UNQUESTIONABLE RIGHT AND, EQUALLY, AN UNAVOIDABLE OBLIGATION TO CONTRIBUTE EVERYTHING WITHIN HIS POWER TOWARD THE EDUCATION OF HIS CLASSMATES.

If teacher and pupils accept this point of view they may find that in so far as they are able to help others, they are themselves helped most of all. They may find at the end that they not only experienced happiness in doing what was once a hateful task, but that each one has gained for himself something quite impossible had he worked selfishly, simply for himself alone. This is, I take it, the essence of good class management for all concerned.

In the best conducted socialized recitation we may find — indeed we must find, if it is to be the best — many other factors besides pupil participation from a social motive.

We cannot have a really successful socialized recitation unless all our pupils know fairly well why they are studying our subject at all. This we discussed in our chapter on General Method.

Again our pupils must have a rather good idea of just what is the chief purpose of the particular lesson at hand — and this means an ability to study the subject of the lesson at home alone — in advance of our recitation.

Finally for the subject of our combined study in the class room, we must have a *project* or a problem that appeals to our pupils as something of interest to themselves largely uninfluenced by our participation as their teacher.

All this requires, if we are to have socialized recitations of this best type, that we must have a wide knowledge both of our subject and our pupils, that we must have a worthy purpose for each recitation, that we must have used unusual skill in assigning the lesson in question, that we must have a remarkable amount of tact in keeping our ideas prominent, but our person inconspicuous, and, finally, that we always have to a remarkable degree both patience and faith to keep us striving for success in the face of failure and discouragement.

In this socialized recitation it is often the little thing that makes or mars the lesson. The impatient interjection by the teacher of a curt word or two may chill the class to silence. Sarcasm kills the social purpose all too frequently. So little a thing as the seating arrangement of the class may strengthen or destroy the social motive of class work. The usual military and unchanging arrangement of desks and seats, the teacher's desk in front, actually makes coöperative work more difficult. Let one who doubts this, meet his class for a single period weekly in a room where the pupils may either gather in a circle about the teacher or seat themselves as committee groups about separate tables. The change in the pupils' attitude as a result of this apparently insignificant modification is truly astonishing. Even the school-room furniture (to say nothing of school-room decoration) seems to have an effect upon the pupils' classroom spirit that many of us may have never imagined. All in all, the genuine socialized recitation is the most * difficult goal any teacher may set for himself — and yet a goal so worthy that all who work with and

* A brief analysis of some of the things a teacher must *be* and *do* in order to conduct a thoroughgoing socialized recitation may help us to appreciate this statement.

for children must keep striving with this goal forever in view.

- (a) He must have a wide knowledge of other fields than his own.
- (b) He must propose a worthy and an acceptable purpose for each recitation.
- (c) He must plan his problems at least six months in advance so they may be integral parts of a progressive whole.
- (d) He must prepare each day's lesson to join it up to present interests as well as to past ones.
- (e) He must have most unusual skill in making daily assignments.
- (f) He must lead by coöperation and not by giving orders.
- (g) He must have tact first, tact last and tact always.
- (h) He must talk little, but most effectively.
- (i) He must have patience, supported by an abiding faith in the value of the truly socialized recitation.

QUESTIONS

1. Why has the college lecture method of instruction invaded our modern high schools?
2. What remarkable disclosure of time allotment within a lesson have recent investigations disclosed?
3. How do adults do business in their voluntary associations?
4. What objections are voiced to using this same plan in the junior high school?
5. How may I follow a middle course between the lecture method and the method which puts the pupil in command?
6. What social purpose may I hope my pupils will acquire if properly guided?
7. How may the over-impulsive and over-helpful pupil be curbed?
8. What may make amends for the slower progress of the recitation that is built up of pupil contributions?
9. What social plan would I propose for review lessons?
10. What devices can I suggest that may make the realization of the social purpose of the class work more successful?
11. How does the genuine socialized recitation sum up the best in all class room teaching?

CHAPTER XVI

FIELD WORK IN ALL JUNIOR HIGH SCHOOL SUBJECTS

PART I

VALUE OF FIELD WORK

In most of our larger American cities the housing problem has been a most acute one during the last few years. The cost of materials and of skilled labor have been so tremendously in advance of pre-war rates that few buildings have been constructed. Our school construction has suffered no less than other public and private building enterprises and in many neighborhoods the increase in school population has been decidedly greater than the number of new sittings provided for the children.

As a result the educational authorities in many cities have been obliged to sanction a plan by which two school classes were obliged to be content with the use of a single school room, the actual class room instruction of each group being limited to considerably less than the normal five hour period of a full school day.

In New York City perhaps more than in any other single city, the inadequacy of school sittings has recently forced the introduction of some part-time plan upon more and more of the high school population.

Hardly a secondary school in all Greater New York was able to furnish seats and desks for all its entering pupils, Speyer Experimental Junior High School suffering with the others. The problem was more acute at Speyer

School because in a school where the brighter pupils were to be allowed to do the three junior high school years in two, every moment of the school day was of unusual value.

It was this problem placed squarely before the teachers and pupils of Speyer School that led to a new type of work that seems to have proved itself of sufficient value to warrant more or less general adoption.

The considerations that led us to the new type of work were two-fold. First was the over-crowded school building that we have discussed, which forbade our meeting all our pupils for a full school day. The second was a consideration that in no wise was influenced by the over-crowded school, but rather by a desire to work out by experiment a solution to another problem quite as serious, but wholly distinct from that first described. This second consideration was the unfortunate separation between school work and real work so undeniable in the majority of our conventional American public schools.

Undoubtedly, the separation of school work and real work had its beginning in the desire to make intellectual progress more rapid by concentrating upon what it considered the essentials. In adult life a man may take ten years in business to learn what he might teach another in one year if he were freed from any other business obligations while doing so. As a helper in a dye works, or a paper mill, a man may learn less about the "how" and the "why" of the various manufacturing processes in an entire year than a college student would learn in an hour of concentrated study.

The result in centuries of curriculum building has been to concentrate often in a month's work information that it took a generation or more to work out for itself in the field. More and more the desire to give in school the

essentials only, has led to the study of theories and processes as separated from their actual application in the world of men at work until finally we may have arrived at such a degree of separation in certain subjects of study that the things we learn at school seem to have absolutely no connection with the things that are done outside the school building.

Students of the philosophy of education have often bewailed this serious separation between the world of work and the world of study. The children and even men and women who are pursuing their higher education have, in many communities, come to be regarded as a cloistered group, separate from the world of action and accomplishment, studying unreal things, academic theories, pursuing a sort of mental gymnastics, that might possibly be of service later, but that were in themselves largely trivialities or unrealities when contrasted with the serious and real occupations of the world at work.

These students have asked if it were not possible that in our anxiety to make for mental advancement we have reached, or even passed, the saturation point and that in our endeavor to spare our pupils the delays inseparable from learning through actual experience in the field, we have passed the point where theory, separated from practice, is of genuine value. Is it not possible, they ask, that we could give our pupils a better education if we took them a shorter distance, perhaps, into the realms of theory and used the time thus saved to give a less narrowly selected experience through experiments in actual field work?

To be sure, they will admit, there is little to be gained in field work that the super-student may not find written out, in the main, in the text-books or treatises of some publisher. Nevertheless, there may be a great deal

that the school boy or girl might learn through practice that it would be impossible for the average pupil to gain from a printed page, even were it open before him.

Is it not then, they ask, possible for us in school to begin a "Back to Business" movement that will counteract the deadening effect of too much theory, studied too often, apparently, by and for itself.

As we have repeatedly noted, our adolescent children are, in general, inclined to look upon their school work as something so theoretical and impractical as to be of decidedly doubtful value to them after they have left school.

Possibly no one thing has contributed so much to this belief as has the child's idea that what he learns in the class room is valuable only there. Though in a large city, thousands may be studying and utilizing for their work or recreation the principles which he is studying at school, still the pupil never sees these mature students, nor can he from his limited home environment, gain any genuine impression of the nature or the demands of the work which these others follow.

The idea of genuine field work in which the pupils not only observe others gaining their livelihood, or increasing their happiness by the utilization of school theories, is so new that it as yet has received scarcely any serious consideration in the public schools of this country. Yet in some schools a beginning, at least, has been made and the results appear to justify the extra labor such a plan entails.

For years teachers of natural science have been planning excursions in after-school time, or on holidays, so that the pupils might observe in the field, or in the factory, the natural or manufactured objects about which they have been studying. Yet, in the main, even teachers

of science have preferred to bring in specimens or to perform class room experiments that would give the information they sought to impart. No one who understands the demands of natural science will fail to recognize the value of class laboratory work, but students of this problem have begun to see that better results may be obtained where school room work is supplemented by equally serious field work entirely outside the school building. To a certain extent the so-called Gary School Plan attempted in theory to give a type of field work in all branches when it regularly assigned its younger pupils to watch the varied class work of the more advanced students for certain periods each week. The idea here was, in part at least, that the younger pupils might see the older pupils actually employing in their daily tasks the skill and information which they, the younger, were just now endeavoring to acquire in their own daily class work.

Valuable as such observation, if properly directed and supervised, may be, it has little except convenience to commend it in comparison with a plan which chooses for observation outside-activities in which men and women are actually at work earning their bread and butter.

In any city, and especially in a larger city, the school opportunities for field work that are usually neglected, or ignored, are simply enormous. The opportunities for observing work that is helpful in making more real the studies of the junior high school may be better in New York than in many other cities and towns. However, there is scarcely a village in America (that is large enough to support a junior high school) that does not furnish in its activities opportunity for showing the application of the child's school-taught theories to practical adult work. Indeed the village may, through its more intimate per-

sonal acquaintance, offer opportunities often forbidden in a city.

Returning to our Speyer School problem we found that many of our pupils could be housed in the school building scarcely more than half of the time needed for their school work, though all were sadly in need of instruction for the full school day. At the same time, we found pupils forced to concentrate upon the study of text-book theories to an extent that made the proper joining up of theory and practice often an impossibility.

The solution of both difficulties appeared to be one and the same — assigning class-room work under class teachers to periods of work wholly outside the school building. As an experiment, we tried to conduct a full school day with the pupils who were only half a day in school. Two years of successful experimentation have led us to incorporate field-work — work outside the school building — as a required part of some of the regular weekly program of all classes, regardless of the seating conditions.

It will, however, be useless for us to insist that our loss of school time was always and invariably counterbalanced by an increase in school interest and application to school work. Whether or not the field-work is worth while depends, when all is said and done, less upon the field to which the excursion is made than it does upon the intelligence and skill of the teacher who conducts the excursion. Field-trips are not, experience seems to show, wholly valuable in themselves as it is quite possible for a class to visit an open treasure trove and return empty handed. Of this more may be said later, but it is well to have in mind that the essential prerequisite for any class excursion is a teacher who will use the excursion time to teach a definitely prepared lesson, if not

by word of mouth, then at least through objects or experiences which his foresight and careful, advance plans alone will make significant to his pupils.

Some one may object that we have belittled the necessity of having enough worth-while places to visit and that though these field trips may be well enough for New York children who have the unusual opportunities of a great city and the carfare to spend in utilizing them, yet such a plan would be of little value in a village or small city which might be, nevertheless, capable of supporting with profit a junior high school.

To be sure, the wonderful world-wide collections of art and of natural science in the Metropolitan Museum, the Museum of Natural History, the Aquarium, the Zoölogical Gardens, may be more or less peculiar to New York, but we shall endeavor to show that neglected opportunities far in excess of their possible use lie just outside the doors of even the village school. It will be, not New York, but the average American town that we shall have in mind in outlining the possibilities of field work in all subjects. Before the close of our chapter we may also discuss the difficulties that usually accompany field work where the objective material is too abundant.

On the biological side of general science there is no doubt that the possibilities are great; almost any vacant lot may be surveyed for its plant and animal life and may furnish evidences of the struggle for existence, adaptation to environment, seed dispersal, protective coloring and special devices for self protection or for propagating the species.

Agassiz is reported to have been able to teach the whole animal kingdom from the study of a shell, but it takes a highly trained zoölogist to make such a proposal. To the extent that a teacher is himself inventive,

well informed and forehanded, can the smaller things one sees in a vacant lot be made significant. Trips to the woods and fields need no defense in their possibilities for the teaching of botany and zoölogy, but it takes a trained teacher to see the possibilities in common things. For a New York City example, almost every back yard has growing in it a scraggly bush, shrub, or tree, that the botanist knows as *Ailanthus*. A whole course in botany, interesting, practical botany, lies in every such plant—the commonest tree in New York City. The history of the importation of the *Ailanthus* from China—where it is known as “The Tree of Heaven”—to Flushing, L. I., for decorative purposes a century ago, how it escaped from captivity in an arboretum by its winged seeds, how it thrived because it had no enemies in America, having left the insects that fed upon it in China thousands of miles away, how it provides strong, healthy seeds by separation of the sexes in different trees, how pollination is unusually well provided for, how by making a super-normal effort for its first few years it grows like a weed and takes foot-hold where an elm, a maple, or an oak would be trampled down, how later it settles down to the slower work of trunk and branch strengthening, how it protects itself from wind and ice and snow, how it blossoms, how it spreads its species—all this and more can be unfolded from the study of New York’s commonest weed-tree, the *Ailanthus*.

So in each locality there may be unfolded from the commonest and meanest things science stories that interest and educate the children in the world of science.

On the physical and chemical side of general science the school building furnishes opportunities for many investigations. The school building has running water; where does it come from, how is it brought to the school,

how even is its flow controlled in the aqueduct, in the mains, in the faucets at the sink. All this involves the study and appreciation of scientific principles if the work be rightly done. The school heating apparatus and its passing of the latent energy of coal to the warmed air of the class room, is duplicated more or less in every home and abounds in teaching-possibilities, if only the teacher is capable of using the material so close at hand.

The town's lighting plant, its plan of sewage disposal, its transportation facilities, are all problems of scientific engineering that may furnish laboratory exercises second to none, if the teacher knows how to use his materials of instruction.

Natural Science, even in a large settled city like New York, presents opportunities that are simply overwhelming. To begin with there is the heating and ventilating system of the school itself, its water supply, its gas supply, even its sewerage to furnish scientific problems. The wonderful collections of living animals and plants in the Zoölogical and Botanical Gardens will serve for many excursions. In the winter there is the never-exhausted Museum of Natural History with material for a hundred valuable excursions. The uncultivated hills of the Palisades just across the Hudson give opportunity for field work such as the country school affords, while neighboring market gardens and public markets bring the farm almost to the city school door. The difficulty in science is always to decide wisely which one of the five or ten possible and similarly attractive excursions offers the best opportunity for pupil improvement.

In excursion work the study of natural science, because of its unequalled opportunities and marked success, blazes the trail which the other subjects will soon follow in taking the school pupil outside the class room for school

work that is fully as important and serious as any in the recitation room.

Mathematics may seem a very difficult subject to study in the field, but when we consider arithmetic, algebra, or geometry, as the "how much" or "how far" of every scientific or business undertaking, we gain some idea of its possibilities. Visit the grocer, the butcher, the dry-goods store, and after pricing the goods, attempt to compute how the price is fixed. The raw material, the manufacturing process, the cost of transportation, the overhead charges of rent and salaries in the retail store, all must be figured in and made a part of a series of computations that not only requires plenty of figuring, but an appreciation of business methods that is itself educational.

Visits to a local bank will allow the pupils to observe the various employees at work and to learn their duties, so making the real need for accuracy in calculating as well as giving a genuine first hand conception of the nature and operation of a bank service to the community. A safe deposit vault, if visited, will give interest and reality to the study of deeds, mortgages and bonds.

Modern instruments of rapid calculation—adding machines, comptometers, slide rules, etc., may be observed at work or in the stores where they are sold. Instruments of mathematical precision—gauges, micrometers, weights and measures used in exact calculations—may also be observed and explained.

All the more common machines used in modern steel construction may be observed at work and shown, in cases selected for illustration, to have a mathematical basis.

Somewhere in town there is a new building going up; its cost problems can be made ours too, but we can also calculate angles and distances between its supporting beams. More advanced classes may even consider the

strength of building materials, and matters of stress and strain in local bridges may be studied in class from material gathered in field observations.

The time, labor, material and cost of paving or asphalt-ing a street or making an excavation for a public building, give projects for field work in mathematics that may last a semester. Such work, well done, surpasses in value similar work done in the class room only.

English field work may involve a study of the local newspaper. The children may learn how news is gathered, how it is written up, how the copy is prepared for the typesetter. Later they may see the news actually being set up by hand, or on a linotype machine. Then the galley proof, or trial sheets, may be examined for cor-rections until the form is locked and the paper is on the press. This is writing that parents pay to read—not literature, perhaps, but English composition beyond a doubt.

In Written English a visit to the postoffice to observe the collecting, sorting, packing, or unpacking, of letters and distributing them will give an added interest to letter writing. The libraries and musuems will provide opportunities to observe the actual letters and manu-scripts of prominent men (with, it must be confessed, no great improvement in school penmanship). The libraries will also furnish collections in book form of the letters of noted writers and autobiographies which are in effect open letters from the author's own hand. Indeed all the excursions, in whatever subject taken, will furnish ideas and facts for the pupils to write about. The coöperative teacher of English will find more difficulty in limiting the range of selection than in providing subjects upon which the pupils will be eager to write letters to their friends.

Literature may be studied by entire classes at the

library where ALL the works of the author under discussion may be seen, the books actually handled and their titles read and copied down. Illustrations not found in school editions may be looked up to make the story more real.

In English Literature, while studying Ivanhoe, a visit to a museum may make real the suits of armor, coats of mail and tournament lances, while the tapestries and needlework of the women of that period may also be studied. The Lays of Ancient Rome may find, in the museum, Roman antiquities to give an added interest. Cooper's novels may be supplemented by visits to various Indian collections and to the collections of household goods of early colonial days at various historic homes that may be open to the public.

By special arrangement with the local motion picture house still more can be accomplished. Many of the better known English classics may now be had in film form. Picture houses, usually closed in the morning, are usually only too glad to open for school children for even a fifteen cent admission if the groups be large enough, especially if the same film will be patronized by the adults of the community in the afternoon and evening. The morning performance is usually "velvet" to the average motion picture house. The films are on hand, and rental is paid for the day; there is no need for ushers at a school performance. The operator is on salary and may be put to work. So the school performance at ten in the morning is clear profit and the admission fee can drop accordingly.

For example, during the past semester some classes have seen on the screen in school time—Treasure Island, Huckleberry Finn, Evangeline, The Copperhead, The Vicar of Wakefield, Dombey and Son, The Courtship of Miles Standish, A Yankee in King Arthur's Court, and Webster's Daddy Long Legs.

In Oral English the opportunities, especially before the November elections, to observe public speakers at work will not be overlooked and pupils will attend, so far as possible, the gatherings where men of national repute address the public. Sessions of the local legislative body —the Board of Aldermen in New York — will give opportunity to see parliamentary practice as well as to observe the effect of spoken argument on its hearers.

The Social Studies may take the pupils afield for the study of local landmarks and their histories. If there is no local historical museum there usually are still one or more homes that will, if visited by permission, bring out for examination antiques or memorabilia of real historic value. The study of the village sites is a study in history making. What once stood where the post-office stands? What building was on that site before the post-office, of whose town lot was it once a part? On whose farm did the village spring up, or around what trade route was it first established? What geographical advantages led the first immigrants to settle here rather than at some neighboring location? Do these same advantages still remain? All this may, of course, be gotten from books, but from books alone, it lacks the significance and the educative value that comes from seeing the very spots themselves and walking over the historic trails.

The local law-makers, or courts, may meet infrequently, but when they do, there is no better place to study government as it is administered than in such meetings, open as they must be to the public. Children who see and hear a local ordinance in the making may be led to a better idea of their own and their parents' responsibility at election time. Children who witness part of a carefully selected court trial have a greater respect for law and for those who are charged with its enforce-

ment. All the local agencies for local protection, the police station, the fire-house, the lighting plant, may serve as objective material in community civics. Even the local jail may teach at times without degrading.

But as in every excursion in every subject, the pupils' index of success in field trips in Social Studies will depend almost wholly upon his instructor's clear pre-vision of the situations in the field; his teacher must each time have an aim that is definite, worthy and possible of accomplishment or the trip is useless.

The correlations are infinite. The General Introductory Social Science of the eighth school year, consisting of a study of primitive and of ancient peoples, their mode of life and of government, finds contact with the English literature and oral English, mathematics, natural science and art in the field trips that may be planned.

Taking English literature as an example, the History of Greece and Rome correlate with Homer's *Odyssey* and Macauley's *Lays of Ancient Rome*. A study of Indian tribes and customs is more interesting when made in connection with the reading in English literature of Cooper's novels. Scott's *Ivanhoe* and *The Talisman* make more real the European history of the middle ages with its feudal government and correlate also with art excursions to study Norman Architecture, or mediaeval armor.

So on the excursions in English literature to the motion picture house, or to the library, or in the art excursions to the museum, it is possible to emphasize the Social Science side by calling attention to the historical evolution of the social or the material setting of the particular story that is being studied.

In Community Civics—a part of our Introductory Social Science—the connection between social and natural science is most marked. The way people manage

to live with comfort and health in large cities is found to be largely a matter of physical, chemical and biological science.

The water supply, garbage and sewerage disposal, gas making and distribution, electric light and power service, supervision of foods and their distribution, street cleaning, house-cleaning, control of contagion, etc., etc., are all matters of civics in so far as the people of a community must make legal and financial provision for the initial expenses of this service for its maintenance, but this service depends upon natural science as to the manner in which the service is actually accomplished. Therefore excursions in natural science may be combined with field work in civics with good results.

In *Manual Art* not only may the Art Museum's collections of paintings and statuary be observed in part, but, equally, beauty of design in needlework, pottery and the rarer metals may be studied and explained. Buildings, both public and private, may be studied for their architecture and not only may the conventional Greek types be recognized, but equally the medieval and the modern.

Early colonial design may be noted in period furniture as shown in the collections, either public or private, where the pupils may learn to recognize and, in part, to appreciate the types of furniture so earnestly sought by the collector of antiques.

Commercial design must not be overlooked, but the process as well as the product of designs for printed cloth, wall paper, and figured weaves may be observed and explained. Even the local dry-goods store may serve for an art excursion.

In art as in science the opportunities presented exceed the possibility of exhausting them, though in art the demands upon the kind indulgence of the private owner

may make such field work more difficult unless a class be unusually well disposed. On the contrary, however, most collectors of objects of art are only too willing to exhibit them if only they become convinced that those to whom the treasures are displayed are seriously anxious to develop a genuine art appreciation.

In *Music*, where expense seems to forbid field work, the nearest approach to field work seems to be through such concerts as may be arranged upon the phonograph. Records, loaned by the pupils, parents and teachers, make it possible to reproduce at one time almost an entire opera while the instructor explains the story which the composer tells. I have seen the skillful teacher of music hold the entire attention for an hour or more of over a hundred pupils to the operas of *Aida*, *Faust*, *Il Trovatore*, *Cavalleria Rusticana*, *Rigoletto*, *La Tosca*, *Pagliacci* and *Lucia di Lammermoor*. That such modified field work is truly effective no one that has seen it can possibly doubt.

PART II

PRACTICAL DETAILS OF FIELD STUDY

While almost any student of education who is not a teacher may now be convinced that theoretically field work is a most valuable adjunct to class-room work, many class-room teachers may still be inclined to believe that the practical difficulties such a plan would be sure to encounter might easily be sufficient to make it impossible, whatever be its theoretical value.

Certain practical objections, especially those of (1) Time (distance), (2) Money, (3) Discipline and (4) Distractions, may seem to offer insurmountable barriers to any general adoption of the Field Work Plan in the average junior high school.

To those who feel able to settle these problems satisfactorily in their own way the following detailed account will be of interest only as the story of how one school avoided some of the genuine difficulties it first met with.

I. *Time*

In the first place, if field work is to be made a serious part of school work, we have shown that it must come *in school hours*. It is unfair to ask a class to give its entire school-day afternoon, or holiday morning, to a required and compulsory school task. The time allotted each subject for either class-room recitation or home study is fixed and definite. The teacher who arranges a field trip in after-school time that really belongs in whole or in part to the home study of other subjects, harms the work of the school even though he may help for the time his own subject.

Several plans have been worked out by which pupils can take their field work in school time without interfering with other school work. Each of these plans places an added burden upon the shoulders of the program maker and yet not so great a one as to be impossible of satisfactory adjustment in the hands of an expert.

Let us suppose that the subject in which the field work is to be undertaken comes regularly five times a week. It may be desirable to have a field excursion weekly as in general science, bi-weekly as in community civics, or monthly as in mathematics.

The average excursion, if it is to be worth while, can scarcely take less than two, or more than three, periods of school time. On the basis of a forty-five minute period this would give from one and a half to two and a quarter hours for the excursion as a whole. Taking the shorter

allowance as our limit, this may not unfairly be supplemented by such little before or after school time as may be necessary to reach, or to return from, the place to be visited.

For the day on which the excursion in any subject is to take place the subject in question is assigned in advance, the two opening or the two closing periods of school.

The pupils preferably leave the school building at the close of the first afternoon period — at 1:30 or 1:45 p. m., as the custom may be, and proceed to the place of their field work — half an hour's walk, or ride. From half to three quarters of an hour may be spent in observation and note taking, after which the class may return as a whole to their school for dismissal or may be dismissed at once when the object of their observation is covered, to return home as individuals.

With older classes already trained in the mechanics of field-work, the first two periods of the day may be used when it is possible for the pupils to go from home directly to the place of meeting. After one period of observation the class returns as a body to the school, in time for the opening of its third daily period.

II. *Money*

Of course where the object of the field trip is found within reasonable walking distance of half an hour or so the question of money does not appear as a difficulty to be overcome. While pupils who are physically handicapped, or who live at a great distance from the school, may be permitted to ride, the rule that if one walks all walk has been found most satisfactory.

In a large city, however, there will be field trips that

will unavoidably require car fare if the trip is to be finished in its allotted two periods.

The time may come when the cost of excursions will be covered by grants of school money, for it is no more unreasonable to spend money to carry pupils to the things they are to observe than, as now, to spend money to bring things to be observed into our class room.

In the annual budget of most high schools an allowance is made for the purchase of illustrative material, pictures, charts, globes, reference or library books, laboratory material, etc., part of which might properly be applied to the expenses of a series of excursions where the same, or better, results would be secured by taking the class from the school to the objects to be observed.

However, in an experience covering several years no parent has been found who was unwilling to contribute the necessary car fare when the object of the excursion was at a distance, although it was necessary to take definite steps at the start to convert the parents to the excursion idea. To that end a circular letter was printed, addressed to the pupils' parents explaining the nature and purpose of the proposed field work. It was made plain that these excursions were not picnics, or amusement periods, but had a definite educative purpose. It was further explained that these trips would not be taken if, in the belief of the school, the time could be better employed in the class room. It was carefully explained that the trips were planned solely because, through the excursions, the pupils would receive a better education than could possibly be provided without them.

Finally, a printed request, addressed to the school principal, was sent to each parent to sign and return if he chose. These signed requests—renewed each semester — were kept on file as a safeguard.

These requests were worded approximately as follows:

I hereby request that my son be permitted to go in his school time on the regular weekly excursions of Speyer School pupils.

I assume all responsibility for his safety and agree to furnish him with necessary car fare, not to exceed ten cents a week.

(Signed) Parent or Guardian

The result thus far has been 100% of requests.

III. *Discipline*

No difficulty has been found in permitting one teacher to supervise as many as thirty-six pupils on a field trip, though with a smaller party the work will, of course, be better supervised and probably more valuable to all who attend.

At the outset there will usually be one or two pupils in each class who will at first fail to recognize the value of the excursion and so tend to upset the decorum and earnestness of the class. If such pupils fail to respond immediately to correction, it may be necessary to send them either to their homes, or under guard, to the school building. Until such pupils awaken to their opportunities it may be necessary to exclude them (their parents being notified) from further field trips and to arrange instead that they use excursion time upon assigned work under supervision at the school.

It is absolutely necessary that the group be well disposed, quiet, orderly and well mannered in order that the school may retain the privilege granted by the institution, performance, or business concern which is being visited. With insignificant exceptions, the pupils of Speyer School have been permitted to visit collections,

museums, libraries, city departments, parks, theatres, stores, markets, factories, buildings and plants under construction, wharves, transportation centers and many other places without the slightest unfavorable criticism from those who at first somewhat unwillingly granted the privileges of a visit. So far in the neighborhood of thirty thousand pupil visits in the aggregate have been made without any untoward incident having occurred. Such an experience will give faith that the difficulties of discipline are not insuperable.

For the actual work of observation, Speyer pupils are divided into smaller groups of five or six pupils, one in each group being an especially trustworthy leader who is directly (under the teacher) charged with seeing that his group obeys the rules and secures the object of the excursion. Such a plan gives the teacher an opportunity to separate possible mischief makers and to deal with six or seven groups instead of thirty or forty individuals. Moreover, the objects of interest are often such as to make observation by more than one small group at a time impossible. In such cases, the process of observation is artificially separated into six or seven steps which the smaller groups observe in rotation, each group beginning and ending with a previously assigned step, the time allowance for each step being approximately the same.

IV. *Distractions*

Contrary to one's first thought, an abundance of material for field study on any one trip is far more a hindrance than a help.

One might think, for instance, that in New York City the Museum of Natural History would be one of the most wonderful places in the world for a field excursion in

Science. The collections in zoölogy, in botany, in paleontology, in anthropology, mineralogy, if not the finest in the world and the best displayed, are probably rarely equalled in America. Not only the collections themselves, but their pictorial arrangement and display enable one to visit and to observe, with but little use of the imagination, the uttermost parts of the earth.

What a gold mine of teaching material, one will be forced to exclaim! Yet with all this wealth of material on every hand a satisfactory teaching excursion to the Museum of Natural History is one of the most difficult tasks imaginable. The class may enter the Museum with one single worthy query, but in an instant the main purpose of the excursion may be lost in a hundred queries that the wealth of material suggests to the pupil's mind. Unless controlled by an iron hand, the pupils who come to study, for example, *fur-bearing animals*, are full of questions about the meteorites, the Malay boatmen, the fossil birds, the Indian relics, the giant whale, the resplendent crystalline ores, the wonderful plumes of still more wonderful birds and a host of other questions that are suggested by what children cannot help seeing as they move to their predetermined place of study.

It is an almost superhuman task for the teacher in charge of thirty-six pupils to prevent, if not the pupils' bodies, at least their minds, from running riot amid such impelling distractions. The only solution for such a situation (and distractions are met with, in even the theoretically most barren fields) lies in supplying each pupil with a *purpose* so definite, so distinct, so serious that it can withstand all the temptations to distraction, and this same preparation is required for every single worthy excursion, even for the excursion planned only to a vacant lot.

In a school-room period of preparation the pupils work out for themselves, under guidance—*what* they want to observe—*why* they want to observe it—and *where* they may best go to get the results (information) they seek. This is done as an absolutely necessary prerequisite to any field trip. An added part of each pupil's preparation is a definite list of worthy questions worked out together in the preparatory period. These questions may be common to all the class, or they may represent certain phases of the field to be covered by certain groups and later to be shared by all.

Before the trip is ever actually begun each pupil has then a clear idea of what he is going to try to get. He has definite written questions asking for information which his excursion may supply only if he is truly diligent. In so far as may be necessary, added instruction may be given in advance as to the best ways to get the information the pupils' questions call for.

Experience has shown that, other things being equal, the narrower and deeper the range of observations required, the better the results that will be secured in any subject. When therefore in order to keep pupils from getting in each other's way, it becomes necessary for the class to work in small groups the better plan seems to be to select for each smaller "committee" a set of questions whose answers may apparently have significance only when combined with the reports of other "committees" when all meet, subsequent to the excursion, in a committee of the whole. Thus a social pressure is placed upon each pupil in addition to the motives that may urge the individual to stick to the task assigned despite distractions. Following the excursion, the material gathered in the field is called for in the class room and there related and discussed until all have made their contributions and

received the benefits of the combined findings of the class. Not merely interest in planning and assiduity in gathering, but rather the intelligence displayed in appreciating the significance of the facts or processes observed, is the final test of a successful field excursion.

Enough has been said possibly to show that time, money and behavior are, after all, minor considerations as compared with the tremendous difficulties of *distraction* as a barrier to satisfactory field work. However, with a carefully thought out advancee plan expressed in definite written questions and, second, with a high degree of accountability required from each pupil in the class-room work that follows the field trip, experiment and experience have shown that even the difficulties of distraction may be, in most instances, successfully overcome.

It may be that with better appreciation of the causes of failure, we may learn more and more to anticipate and so to avoid the difficulties that seem so often to prohibit successful field study in many subjects.

From those who intelligently persevere in this work, there is bound to come sooner or later a contribution to education that may change the whole nature of our class room instruction a generation hence. A more immediate reward is that wholly worthy sense of congratulation that comes to the consecrated teacher whose greatest joy is found in the added pleasure and progress he brings to the boys and girls entrusted to his care.

QUESTIONS

1. How can field work in junior high school subjects be made to help in the housing situation?
2. What are some of the reasons that have led to the separation of school work and real work?
3. What ill results have attended this separation?

4. What was one merit of the Gary Plan and what improvement on this idea can you suggest?
5. How may field work make school work more real?
6. Why should not field work supplant all laboratory work?
7. What opportunities does my own school neighborhood offer for field trips in General Science, English, Mathematics, Social Science, Art?
8. What are the four chief difficulties in all field work?
9. What is the one greatest difficulty and how may it be met?
10. How would I outline a preparatory period for one excursion in my specialty?

CHAPTER XVII

WRITTEN EXAMINATIONS AND RECOGNITION TESTS

Ever since there have been modern schools for children of adolescent age there seem to have been written examinations which to a greater or lesser degree were used to predetermine each pupil's fitness to advance to a study of new and more difficult subjects. More especially in recent years there have also been students of education, parents and physicians who decried the use of the long written examination in school work. We have been told of cases of ill health, insomnia, nervous breakdown and even suicide, caused by the strain of preparing for final examinations which were intended to determine largely, if not wholly, a pupil's fitness for promotion.

Students of the History of Education in other lands tell us of the civil service system in use for centuries in China where promotion in social rank and in opportunities for higher types of civic service is made to depend upon the candidate's success in passing a series of three or four examinations set by the state. These examinations, we are told, are held usually once in three years — and last for three days at a stretch — deaths from physical and nervous exhaustion not being an infrequent accompaniment of these long written tests.

Furthermore, opponents of written examinations tell us that there are many pupils who never can do them-

selves justice in any written tests. Over-excitable and high-strung pupils are unsettled by nervous apprehension of possible failure and its accompanying disgrace before their fellows. It is claimed that often the more able, intelligent and better informed pupils are ranked by the results of a long written examination as inferior to actually less able pupils whose very indifference to examination results puts them in a frame of mind more likely to secure favorable ratings in such trials of endurance as well as of knowledge.

Finally, there are those who maintain that our American school written examinations, based as they are so frequently, if not universally, upon the pupil's ability to remember facts, give an entirely wrong emphasis to the training of pupils in school. These critics maintain that the real test of any pupil's fitness to advance should be based upon a pupil's demonstrated ability to interpret and use facts rather than simply to remember them. Questions to test interpretation, intellectual power, dynamic, rather than static, knowledge, are so much harder to correct that few of our school examinations are thus framed, but instead practically all our examination questions test memory alone. As a result, it is claimed, the schools are led to place emphasis upon memory-knowledge rather than upon power-knowledge with a resulting deterioration in the educative process.

So far we have regarded the examination evil only as it affects the pupil, but the teacher, far from being the lightest sufferer, is usually the hardest hit. No teacher gives examinations and corrects the papers for the fun of it, notwithstanding the pupils' belief. For most teachers the correction of long written examination papers is about the hardest and the meanest work of the whole school year, especially since in most school sys-

tems this work must be done at home in the time theoretically allowed for rest and relaxation. There is no "double time" nor even "time and a half" for the teacher's overtime labors in the correction of examination papers.

It will rarely take the most expert teacher less than five minutes to correct and grade a pupil's two or three hour examination. Given the smallest customary load of five classes of thirty pupils, we have not less than 150 papers for one teacher's correction, or from 15 to 25 hours at hard labor as the sentence of the conscientious teacher at promotion time. Principals and superintendents who, forgetful of their own earlier trials, set examinations of the old style for high school promotions impose a burden that may sap the teachers' vitality which might far better have been left them for their real work of instruction.

The proponents of written examinations, while admitting many of their opponents' contentions, base their chief reliance upon the inevitableness of the written test if any standards of education are to be maintained. Had each teacher, they say, but three or four pupils, or even in some cases as many as ten pupils, it might be possible for one teacher to be so intimately acquainted with each pupil's individual attainments that no written tests would be necessary. However, where thirty or forty pupils are gathered in one room under one instructor, it becomes humanly impossible for any adult individual below the rank of genius to know surely the positive intellectual achievements of each pupil in the group. So the written test is introduced that all the pupils may attempt to answer at the same time certain basic questions as a measure of their school success.

Even were there no further argument from the proponents of written examinations we will find it well

nigh impossible to escape the conviction that where pupils are gathered in classes for class instruction upon common subject-matter, some form of uniform written examinations are truly inevitable, if any standards of fitness for promotion are to be maintained.

The proponents of written tests, however, go further and maintain that these written examinations are of value not only to *the teacher* in showing him what each pupil knows about the particular topic under examination, but are no less valuable to each *pupil* in showing him what he knows (and, equally, what he does not know) about this particular topic. Teachers tell us that nothing short of a test where the answers are put down in writing, subject to analysis and review, will be accepted by some pupils as evidence of imperfection of their own knowledge. Many a pupil wholly content in his own estimation of his perfect subject-knowledge, is first awakened to his real imperfections by re-reading his own examination paper. We are all familiar, too, with the boy who "knows the answer, but cannot express it" and we all have labored to show this boy that until he can express himself correctly he has absolutely no real knowledge of the subject under discussion.

Further benefits claimed for examinations, especially those for promotion, are that these longer written tests require a pupil to make a rapid review, summing up as a preparation for the examination, the high spots of his term's work and that only by such a crucial test can the pupil be led to appreciate relative values in the work he has just completed. We all know the type of man who, we say, is unable to see the *forest* because he sees only the individual *trees*. In our schools, it is claimed that instruction without the final written tests makes for just this type of mind, as in the boy who can get each fact from

day to day, but who cannot appreciate the *subject* because his facts lack interrelation as parts of a unified whole.

Our final conclusion as to the value and the necessity of written examinations is apt to lead us to decide that for the average boy in the average class of junior high school grade, examinations, properly conducted, are of greater value than harm and that, despite occasional individual injustice, on the whole the examinations are the only way of fairly estimating the individual's proficiency when he is one of a group of thirty or forty others.

So far we have been discussing examinations as if they were all pretty much alike as, on the whole, we know them to be, or to have been. Still, a moment's reflection will bring to our minds examinations that are widely different in character and purpose. Is it not possible that the examination may be correct in theory, but harmful in practice? Is it not possible that the faults are not inherent in an examination system, but in the specific examinations that are actually given to our pupils?

In the junior high school we find the earliest school examinations that are considered truly significant. No one thinks of thus examining a group of little children in the second or third school year, but from the junior high school through the senior high school, college and professional school, the "set" examination grows and thrives, increasing in importance and in terror until the law and medical schools cap the climax in the value attributed to long and difficult written tests.

With the seventh school year, the pupil is introduced into a series of written tests that will continue so long as the boy remains a student — or, possibly for three years of the junior high school, three years in senior high school, four in college and three or four in professional

school. For the boy who "cannot do well in examinations" the outlook is very dreadful—for more than a dozen years ahead examinations challenge his progress at every step.

Since the junior high school has for its aim the preparing of its pupils to do better those desirable things they will do anyway, we must seriously consider the apparently inevitable examination system that a large fraction of our pupils may elect to pursue. Even though we may totally disbelieve in this examination system, we must not do anything that will weaken our pupil's chances of promotion along the path that convention has established. It is not a theory, but a condition that confronts us. Our pupils must be trained to pass examinations unless they all are to finish their formal education with our junior high school.

As pioneers in education, bound less by convention than is any other type of school, it may be possible for us to devise ways and means of approaching the examination system that will lessen its terrors, soften its hardships and increase its values to both pupil and teacher. If this is to be true, the new tests of general intelligence, the modified "army tests" which our foremost American psychologists have devised, will point the way.

Furthermore, if speed grouping, as previously discussed, is to be a feature of our junior high school work, and few will debate its advisability, then we need to provide for frequent opportunities for re-grading of our pupils within each group. Instead of semi-annual, or even quarterly, tests, we may decide that we should have quarterly tests in each semester.

In a school year of forty weeks divided into two terms, or semesters, of twenty weeks each, experiments seem

to show that the longest period that should elapse between the promotions of homogeneously graded junior high school pupils is not far from five weeks. In the twenty weeks term this gives four stated periods, five weeks apart, when a taking of mental stock is required. More frequent review periods seem to interrupt the orderly forward progress of the school; less frequent review periods magnify disproportionately the labors of each review.

Under the newer plan of more frequent promotions, we must make our tests short, because our pupils are yet but beginners. Even though (in New York State) our third year pupils must prepare for a three-hour examination covering a year's work in the first year high school subjects, we need not ourselves begin our written reviews with such cruelty to children. And again, because we are not at first compelled to meet these challenges of fitness to proceed, we need not wait until the school year is finished to set our review tests.

For the first junior high school year we would propose a time schedule of promotion from one homogeneous speed group to another that would place these tests approximately five weeks apart—giving eight such review periods for the seventh school year. For this first junior high school year we would even propose no mid-term, or end-term, reviews that would cover more than five weeks' work. To a certain extent, of course, each test covers much of the work that has preceded, though studied more than five weeks before, but only, however, to the extent that such preceding work is a real factor in present progress. In other words, we would test fitness to advance, rather than ability to recall what one once knew, but which is not pertinent to the work at hand.

For the second junior high school year we may con-

tinue our five-week reviews, but at the middle and end of each semester we shall plan review tests that cover ten at first and later twenty weeks' work, thus increasing the review requirements in preparation for the more difficult examinations that lie still farther ahead. For the third junior high school year (the ninth school year) we must accept the compulsions of convention and prepare our pupils for tests that cover a year's work. This we can best do by a series of tests at mid-terms and at mid-year that cover to such extent as may be necessary all the subject-work that has preceded.*

* If we have been able to follow this apparently complicated, but yet inherently simple, examination time table, we may have constructed a mental picture not very different from that shown by the following table:

<i>Order</i>	<i>Period</i>	<i>7th Year</i>			<i>8th Year</i>			<i>9th Year</i>		
I	Test 5th week	5	wk. review	test	5	wk. rev. test	5	wk. rev. test	5	wk. rev. test
II	" 10th "	5	"	"	10	"	"	"	10	"
III	" 15th "	5	"	"	5	"	"	"	5	"
IV	" 20th "	5	"	"	10	"	"	"	20	"
V	" 20-25th "	5	"	"	5	"	"	"	5	"
VI	" 25-30th "	10	"	"	10	"	"	"	30	"
VII	" 30-35th "	5	"	"	5	"	"	"	5	"
VIII	" 35-40th "	10	"	"	20	"	"	"	40	"

For schools that have classes capable of covering the three years' work in two years of school time, we may have a time schedule somewhat like the following:

<i>Order</i>	<i>Weeks</i>	<i>7th School Year</i>			<i>8th School Year</i>		
		5	5 weeks review test	5 wks. review test	10	"	"
I	5						
II	10						
III	15						
IV	20						
V	25	5	"	"	5	"	"
VI	30	10	"	"	30	"	"
VII	35	5	"	"	5	"	"
VIII	40	20	"	"	40	"	"

At once there will be aroused an intense opposition to such a frequent promotion period as one coming every five weeks. Any one ever connected with school work can recall the upsetting of daily programs, the general breakdown of school morale that often has accompanied the examination week or the promotion week of past experience. To repeat this general upset every five weeks would make consecutive constructive work impossible, it will be justly claimed. No arguments for review examinations could justify such constant interruptions of our school work in order to take stock of our school progress. Indeed, under the old system, repeated every five weeks, we should be so exhausted in measuring our progress that we should have no energy left with which to progress.

If we are able to promote every five weeks we must devise an examination system so wholly different from the customary one that not a single one of the many obvious evils of the old plan will be present.

In the hope of finding a way of examining our pupils that will lessen the mental fatigue of both pupil and teacher, we have, as we have hinted, the possibility of some approximation of the widely used tests of general intelligence.

Psychologists tell us that in bringing from our storehouse of memory the things we once have known, but have put aside for the moment from our minds, we have at least two common methods—recollection and recognition.

If I have an important engagement I may recollect, or more tersely expressed, *recall* that fact as the time approaches, though the engagement had not been consciously in my mind for weeks. On the other hand, if I pursue ordinary business methods, I will have noted

the date on my desk calendar, or pocket reminder, and as I glance over the calendar for the week *recognize* that I have the engagement on a certain date. In the one instance, I recalled the date without material help; in the other, I recognized the appointment when I referred to my written memorandum.

In the same way we may sometimes meet a friend of earlier years; we *recognize* him at once, but cannot *recall* his name. However, were we given that name mixed among a dozen others, we would almost surely *recognize* the name when we reached it on the list. Again, most of us knew at one time the date of the granting of the Magna Charta; we may not recall that date at once, but if we ever really knew it, we will be pretty sure to *recognize* it when we know it is one of the following: 1776, 1310, 1215, 1492, 1607. Similarly, we may recognize the author of *Twice Told Tales* if we know that he is one of the following: Whittier, Longfellow, Bryant, Hawthorne, Kipling.

By and large, the kind of memory that we need most because we use it most is recognition and not recall. Granted that recognition is a lower type of memory than recall, it is still a most valuable and necessary part of our equipment in the use we make of it after we have left school.

Furthermore, recognition, while it is not all of memory, is still a most important part of it. We cannot recognize that which we have never known. We do not "give away the answer" when we ask a man to select the correct answer among several that we may suggest. We do make it easier for a man to answer us by such a method, but he must still make the correct selection by recognizing it of and by himself. Though constant recognition of once learned facts is most necessary for our

daily tasks, whatever they may be, yet our examinations in school and college have been largely, if not wholly, matters of recall, making these examinations difficult beyond all ordinary necessity and wholly out of line with the newer psychological tests.

We may then attempt to build up "recognition tests" based upon the selection of the right answer from four or five answers that are suggested. This is one of the possible types of tests awaiting experimentation.

A second type of examination may be to ask each pupil to judge and indicate by a mark the *truth or falsity* of each of several statements that we lay before them. This we might call a "true or false" type examination.

In our written tests we have always been limited in the number and range of our questions by the pupil's ability to set down the answers within the time limit, to say nothing of our own endurance limit in the fatigue brought on by the correction of the answers the pupil hands in.

If, however, the pupil's knowledge is to be shown by a simple check mark the time limit both for the pupil who writes and for the teacher who corrects is at once taken from the list of examination difficulties. Instead of asking ten questions we may ask — and should ask — no less than fifty. So far as our subject is concerned we now will have almost wholly avoided the source of error that comes from a limited range of questions. Under the old plan, we are obliged to make a limited selection of questions and so, often to rate the pupil's entire work on the basis of the small sample he submits in his written answers. This is manifestly unfair, but it has hitherto been regarded as unavoidable. Under the newer plan, while we may not cover every last point worthy of recognition, we at least have increased the dependability of our examination results by just that amount that we have

increased the amount of information covered by our new test as compared with our older one.

As examples of the "true or false" type of examination questions, we may have some like the following, selected wholly at random from one of eighty questions in each of several subject examinations:

- (a) An acute angle is greater than a right angle.
- (b) A base ball team playing 36 games lost 25% of them, winning 25 games.
- (c) $(a + 1)^2 = a^2 + 2a + 1$.
- (d) Heather Ale is a flower.
- (e) In Herve Riel the English beat the French.
- (f) A period is always used after an abbreviation.
- (g) The future active emphatic indicative of "try" is "I will be tried."
- (h) Alexander the Great was a Roman.
- (i) Charlemagne lived about 1492.
- (j) It is good French to say "Parlez douxment."
- (k) It is good French to say "Son amiable soer."
- (l) It was Clovis who made Paris the capital of France.
- (m) The Journal is the book of original entry.
- (n) The first true leaves of a germinating seed are called the plumule.
- (o) Cassius led Brutus to believe that the entire fortune of the conspiracy depended upon Brutus' taking part.
- (p) Portia and Calpurnia were well fitted to be the wives of great men.
- (q) King Arthur kept Gareth's secret.
- (r) Madame Curie discovered the X-Rays.
- (s) Criticism (of a classmate's composition) is designed chiefly to point out errors.
- (t) Sohrab received a warning before the fight.
- (u) Few tropical areas are controlled by nations in the temperate zones.

"What," some one will at once object, "shall we give in our tests, questions that are examples of the poorest type known in teaching, the 'Yes' and 'No' questions?

Shall we make the examinations a matter of chance so that any pupil may hope for a fifty per cent rating on the basis of the law of probability, as one might flip a coin fifty times?" Yes, we answer, just that, horrible as it may seem—and the more horrible still because wherever tried this newer type of examination has come to stay, because *all* who have used it are convinced of its unquestioned usefulness and undeniable value.

However, to soften the shock, we may explain that to lessen the influence of chance we can do three things.

First, we can ask so many questions (never less than fifty; over eighty being highly desirable) that the influence of any one single chance answer upon the final result will be correspondingly small.

Second, we can arrange our questions or statements so that exactly fifty percent of them can only be answered correctly by "yes" and fifty per cent by "no."

Third, we can, in determining each pupil's final score, subtract those that are wrong from those that are right, giving the pupil a "net score" of right answers over wrong answers that largely, if not wholly, obviates chance.

For example, if a pupil, following the law of chance, and without other influence whatever, answered twenty-five questions correctly and twenty-five questions incorrectly, on a fifty-question test his net score would be exactly zero, which would be the rating he deserved.

On the contrary, if a pupil blindly marked every question "no," thereby expecting to get at least fifty per cent on his test, he could be arbitrarily rated zero because at the start he was told that approximately half the questions were correctly answered by "yes" and half by "no." In any event, this pupil's net score would be zero if our subtraction plan were followed.

Finally, some clever mathematician will discover that

theoretically a pupil who answered more questions wrong than right would receive a minus rating. As an example, if a pupil answered forty questions wrong and only ten correctly, his net score would be minus thirty. Yet this need not discourage us unduly, for even though this never has been known to happen, the pupil with a minus score would simply receive a lower relative rating than the pupil who scored zero.

As a matter of fact, in any actual test the number of "rights" always exceeds the number of "wrongs" and the pupils' net scores can be transposed to fit the type of rating used in the individual schools by making a chart which will show at a glance the percent value (if that is required) for each pupil's possible net score from zero, or below, to the maximum of fifty, or more, correct answers. Under the system of Relative Rating to be discussed in our next chapter, the grading of these pupils is even simpler.

A third type of examination may be a modified "*completion test*" in which the pupil is given from ten to twenty longer or shorter sentences or statements based upon the subject-matter he is studying. From each sentence or statement the examiner will previously have erased certain key words, or key phrases, whose replacement is left to the pupil in order to make the statement complete and valid.

In order to lessen the time needed for the test without greatly lessening its value as an examination, the missing word or phrase may sometimes be supplied as one of four or five from which the pupil must select the single one which will make the statement correct — as for two very simple examples, "In order to find the annual interest upon an investment we must (add, subtract, multiply, divide) the amount invested the rate per

cent." In this case the pupil would be expected to underline "multiply" and insert "by" in the blank space. Again "The earliest New England settlers were men of great (weakness, indecision, determination, disagreement), though they were (fully aware, largely ignorant, informed, independent) of the difficulties that lay before them."

By questions of this type it is possible for the examiner to put his finger at once upon the exact point he wishes to test with no possibility of evasion or misunderstanding, as in the illustrations above upon "multiply" and upon "determination."

Let no one suppose that these newer plans of "recognition," or "true or false statement" or "completion" examinations can be worked out easily or in a short space of time. The older type of examinations could be "set" in half an hour, the newer type can often not be worked out satisfactorily in a week.

The great gain, however, comes in the entire absence of fatigue and prostration on the part of pupils and teacher that so often accompanied or followed the formal day of examination. The pupils are no longer subjected to the nervous depletion once thought unavoidable at such a time. There is no longer a period of suspense and fear "while the papers are being corrected." Best of all the teacher is able to begin the new work that lies just ahead with energies unimpaired by the strain of days of "marking papers." Under the newer plan "marking papers" may be almost unbelievably simple and easy.

The pupils are given the mimeographed sheets, or they may enter a room where the questions are written on the board, or they may even be simply provided with blank sheets upon which the answers are to be recorded as the teacher dictates them — the first plan being undoubtedly the best one.

The working period, varying with the subject, the number of questions, the exact type of statement employed, may range from twenty to forty minutes, to surpass in accuracy the old-time three-hour examination.

When the examination is completed, after thirty minutes or so, each pupil will have upon his answer paper, which he hands in, a long numbered column, or columns, marked \checkmark or \times , or *yes* or *no* or possibly a series of underscored words or phrases.

The pupils having been previously directed to arrange their papers in absolutely identical fashion, the teacher now has but to place alongside each pupil's answer list, his own correct answer guide, and to check or cross the pupil's answers as they agree or fail to agree with his own key list. To total and subtract takes but an instant, so that each pupil's paper can be finally corrected and scored in thirty seconds, or even less, as one becomes more skillful. No question of judgment is involved; there is no delay and no appreciable fatigue. In two hours the teacher can now do what under the old plan would have taken twenty hours.

Indeed still further, when a class can be trusted to follow directions exactly and implicitly, it may even be asked to score the test results for its own and similar classes, thereby enabling the teacher to secure and tabulate the final results in an incredibly short time.

Though not necessarily always desirable, it is possible with SUFFICIENTLY THOUGHTFUL AND PAINSTAKING PREPARATION to give a test to two hundred pupils and to tabulate the final ratings all in a forty-five minute period. It is also possible to get more extended and dependable measurements than could be secured on the old plan by a three-hour examination with twenty hours for reading, grading and tabulating the answers.

For a moment let us review the gains secured by such a new type of examination as we propose.

First: It gives both pupil and teacher a far more complete and accurate picture of the pupil's own knowledge or skill than was ever possible under the old plan.

Second: It wholly saves each pupil from the fatigue, the strain, and the terror that seemed often a necessary accompaniment of the long written test.

Third: It conserves the teacher's strength for teaching and for constructive work, instead of sentencing him to hour after hour of painful drudgery in the correction of examination papers.

Not that the teacher escapes scot-free from the work of examination by this new method of testing, but that the work is now of a different type—valuable, interesting and constructive. Instead of spending one hour in making up an examination paper and from twelve to twenty hours correcting the answers, the teacher now does his hard work before the examination begins. Instead of spending one hour in making the paper, the teacher may now spend more than four or five hours in preparation. The points to be covered in the test are noted and tentative statements of questions are written down, until finally in a longer or shorter period, from fifty to a hundred questions, or statements, are prepared for the test itself. When it is possible, mimeographed or hectographed sheets are desirable, but even dictated questions with a reasonable pause for the scoring does not appear greatly to modify the results. Yet the results justify the difference in preparation, for the newer type can be framed to give definite, exact, objective standards of measurement which will be practically uniform no matter who corrects the papers—whereas the older type of examination tested so many things as a

rule in one single question, that the personal equation of the examiner made possible variations in grading that might range from as low as 40% to as high as 90% on the very same examination paper.

Furthermore the task of preparing the newer type of examination may be lessened, if, from the very start of the period to be covered later by a formal written test, the teacher begins to work up a set of possible questions by framing each day one or more questions that may be of use in the final examination.

However, the whole idea is so new and so insufficiently tried that it has been found to be as yet largely a matter of self-training and experimentation for each teacher who would enter this almost untrodden field. And yet there seems no possibility of ultimate failure if the intelligent experimenter continually uses as a guide or pattern one or more of the established tests of general intelligence now so easily obtainable.

No one will yet contend that any teacher can at once sit down and work out an examination of the newer type that will defy criticism, yet in so far as any teacher is able to approximate the newer type of examinations in a worthy form, by just that much the final examinations of the future will be robbed of their terrors and the labors of the teacher will be lightened.

By using carefully thought out Recognition Tests it is possible to examine all the pupils of a school on one day and to have their examination ratings ready the next day without any other disturbance of the school than the setting of a uniform time for each thirty-minute test, so that pupils previously examined may not be tempted to give information to those whose test in the same subject is still to come.

On the day following the tests, a series of grade con-

ferences may decide what pupils, if any, are to be moved up or down from the homogeneous speed group in which they were placed at the time of the examination. By the end of the second day the school may be moving ahead as steadily as if there had been no promotion day at all, the clerical work is finished, the promotions are over and past.

Even if this picture seems unbelievably rose-hued, it is still within the possibilities for every junior high school, that will plan its promotion days with sufficient fore-thought and intelligent care, to demonstrate this picture for itself. Even if one hundred per cent efficiency does not come on the first, second, or even third, trial, the gain each time (even the first time) over the old plan will win converts consistently from the pupils, teachers and supervisors. Let us not therefore be prejudiced against trying the new plan because it is easier than seems reasonable, but rather let us be open to conviction that it is better because it is more accurate, whether easier or not. Four or five honest trials will do the rest.

However, if we decide to try the new examinations at all, let us resolve at the beginning to try them for a semester, giving quarterly examinations, or monthly examinations as we prefer. The one thing that we must keep in mind is that we are almost sure to make mistakes at the beginning, so we must resolve in advance not to give up the experiment because our first trials may be only partially satisfactory.

Were the Chinese who study three years for a three-day examination truly anxious to determine not memory, but fitness, for civil service promotion, it is probable that a psychological test could be devised that would give the Chinese authorities in thirty minutes a more accurate and dependable test of mental fitness than the present gruel-

ling grind discloses. Equally, in our American schools and colleges, it is possible and probable that the next few years will devise mental tests for which one cannot "cram" or prepare by a short period of super-application and yet which will give in one tenth the time results more accurate than are secured from any tests now in vogue.

Indeed, Columbia College has already pointed the way — and to the surprise of many critics the new, specially devised entrance tests of general intelligence, in so far as they have been studied, correlate or agree more nearly with the entering student's subsequent first year's achievement than do any other estimates of the student's fitness that can be secured in advance of the actual college work itself. It has even now been indicated at Columbia that the probable character of a student's first year of work can be more truly forecast by such special "intelligence test" than by the result of his teacher's estimates, his principal's estimates, his (N. Y. State) Regents examinations, or even his uniform college entrance examinations set by college professors themselves. We may not therefore be charged with over-optimism if we look forward to a steady increase in the institutions adopting something very different from the old line, written tests.

However, without waiting for these new-type tests to be generally introduced, or even to be specially devised for us in the junior high school, we may work as pioneers in clearing the way for the new tests that seem bound to arrive.

As an example of one of the best of the newer type of examinations the following sample examination may be of interest merely as a model. Of course this examination, intended for young men in their thirteenth school year, freshmen at Columbia University completing their first year of college work, is far above the capacity of any

junior high school group. Yet from a study of this examination which is in many ways the best of its kind I have ever seen, we may form some idea of the newer type of examination that we may set for our much younger and far less mature pupils.

The entire test is not printed here, but approximately one tenth of it only. The questions we quote are selected at random.

CONTEMPORARY CIVILIZATION 1920-1921

SAMPLE EXAMINATION

DIRECTIONS FOR PART I: Read these statements and mark each one at the left of its number with a plus or minus sign according as you judge it to be true or false. Each correct mark gives one credit; each incorrect mark counts as a penalty against you and is subtracted from your score; omitted sentences count neither for nor against you. In judging the truth or fallacy of a sentence, take the whole sentence as a unit. Your score will be based only upon plus and minus signs; don't waste time writing anything else on these sheets. Remember, an omission counts against you much less than a wrong response.

A

1. In general water-bodies and mountains have been, not centers, but barriers of civilization.
2. The civilization of the Phoenicians, Greeks and Romans centered about several short river basins.
3. The country with widely differentiated climate has many advantages over countries with very uniform climates.
4. Isothermal and rainfall maps show that there is greater variety and irregularity of climate in the southern than in the northern hemisphere.
5. The Atlantic and Gulf states need irrigation because of the low mean annual rainfall.

B

1. Man's mental life is in an appreciably large measure identical with that of the lower animals, especially of the most highly developed vertebrates, such as the monkey.
2. In the same organism the same situation will always produce the same response.
3. Instincts as such are inadequate to adjust either the individual or the group to contemporary conditions.
4. Intelligent habits are most easily acquired in the maturer years of a man's life.
5. A man weeding a garden may tire of the weeding long before he is really physically exhausted by the work itself.

C

1. The ideas of nationalism and of democracy are essentially modern in their expression.
2. In Italy and in the Netherlands the city states were the political units in 1500.
3. The merchant guilds were more democratic than the craft guilds.
4. According to Hayes the one motive of the Spanish discoverers on the high seas was commercial rivalry with the Italian merchant cities.
5. India was won for England by the English East India Company, first organized in 1600, which conducted the conquest and government of India for over two centuries.

PART II

DIRECTIONS FOR PART II. Fill in the blank spaces so as to make the sentences sensible and true; you get one credit for each blank filled so that it makes sense.

A

A society may be democratic in its form and still in fact if the majority of its citizens are merely

machines which can be to respond in certain determinate to customary stimuli of names, party slogans and leaders. Literally, most people think, if at all, when they and they have to.

B

Just as agriculture is the ultimate of human society, so has always been an index of culture and civilization. And the of town life have ever depended on the vicissitudes of and So the reviving commerce of the middle ages between Europe and meant the of cities and betokened an in civilization.

PART III

DIRECTIONS FOR PART III. In the following sentences you have four or more choices for the last word. Draw a line under the *one* word which you think will make the sentence sensible and true.

A

1. Modern culture is most nearly akin to that of the Ancient Romans Athenians Spartans.
2. The Reformation in England took place about 1490 1550 1600 1670.
3. The term Huguenots was applied to residents in France who professed the teachings of Calvin Zwingli Luther John Huss John Knox.
4. The Pacification of Ghent involved primarily the people of Spain France Holland England.
5. The principal motive of Columbus in sailing westward was scientific religious commercial patriotic.

B

1. Rural isolation is made unsatisfactory principally by the instinct of gregariousness sympathy love imitation.

2. The tendency of man to believe as others believe is due to sympathy gregariousness submissiveness love of country fear.

C

1. The nation which has the largest coal areas is Germany
China United Kingdom India U. S. A.

PART IV

DIRECTIONS FOR PART IV. Write in brief space the most important things you know about the following suggestive words and phrases; do not follow the order in which they are printed here, but write first about those that you know most about. The sample is simply a hint, and not a model which you must follow.

COMPETING IMPULSES — Loss of efficiency in a given task due to these is frequently miscalled fatigue. Thorndike tells us that we are more often tired *of* work, not *by* it. It is not fatigue but distraction that impairs efficiency and makes us quit, in the great majority of cases; we frequently work freely at a task that we like for many consecutive hours, and are impatient if we are compelled to stop; but we cannot quit an unwelcome task too soon. Literally, we are often more tired by *not doing something* than by *what we are doing*.

SOCIAL INERTIA

RESTRICTION OF POPULATION

FUNCTIONS OF THE MERCHANT GUILD

Two sample examinations in junior high school English may serve in a way to show the possibilities in this work.

The first, a test on events and names, may serve to discover evidence of the pupil's actual interest in the book he has read, or in other words, the vividness of his impressions as measured by his memory of the details of the story.

The second test may be used to measure the success of attempting to teach an understanding of men and motives

— vicarious experience if you will — to develop the pupil's own powers of inference and judgment.

Approximately one tenth of the questions in each test are reproduced here.

QUESTIONS ON EVENTS AND NAMES IN TREASURE ISLAND

Check the right word or statement.

1. The name of the inn where Jim Hawkins lived was
 - (a) The Spy-Glass
 - (b) The Spanish Main
 - (c) The Royal George
 - (d) The Admiral Benbow
2. When the mutineers reached the treasure-cache they discovered
 - (a) the money intact
 - (b) the treasure stolen
 - (c) pig nuts
3. Squire Trelawney was assisted in picking the crew by
 - (a) Dr. Livesay
 - (b) John Silver
 - (c) Captain Smollet
 - (d) Tom Redruth
4. Silver came in possession of the chart because
 - (a) Captain Smollet gave it to him
 - (b) he stole it from Jim
 - (c) he found it in the block house
5. Jim and his mother were saved from the pirates
 - (a) by the revenue officers
 - (b) by Squire Trelawney
 - (c) by the quarrels of the pirates among themselves

QUESTIONS OF INFERENCE AND JUDGMENT ON TREASURE ISLAND

Mark with a plus sign the statements that are true. Mark with a circle sign the statements that are false.

1. John Silver changed his ways as the result of the kindness shown him.

2. Jim did not believe Ben Gunn's story.
3. Jim's information about the intended plot caught his friends unprepared.
4. Sending the mutinous crew ashore practically started the hostilities.
5. It would have been better for Jim's friends if he had stayed in the Block-House.

QUESTIONS

1. What are the chief arguments against the long written examination?
2. What are the merits of such tests?
3. Why can (cannot) promotion examinations be dispensed with?
4. Who suffers most in fatigue, the teacher or the pupil and why? What ill results?
5. Why are frequent promotion periods highly desirable?
6. What bars this frequency at present?
7. Have I secured at least three modern types of group tests for general intelligence with their respective pamphlets showing how I may conduct these tests myself?
8. Give with illustrations at least three types of questions used in these group tests.
9. What benefits may result from modeling our junior high school examinations on these tests?
10. What is the chief barrier to preparing such tests at present?

The very best book upon the subject of tests of general intelligence appears to the author to be the "The Memoirs of the National Academy of Sciences" Vol. XV, 1921, published by the Government Printing Office, Washington, D. C. This work is as bulky as an unabridged dictionary, but full to the cover of facts most valuable to one attempting to construct the newer type of tests.

CHAPTER XVIII

RELATIVE RATINGS AND PUPILS' REPORT CARDS

School reports and report cards have been so long a matter of custom that we are apt to assume that their usefulness is beyond question.

To be sure, parents, who send their children to a school which they themselves rarely, if ever, visit, have an unquestioned right to know how their child's progress in school is being maintained, but it is by no means a settled question as to whether or not the usual school report-card gives the parents the information which they have a right and a duty to receive.

The pupil himself is also interested in his school reports and they are valuable to him chiefly in assisting him to gain the ability to judge correctly his own progress in the school work he is pursuing. Parents and teachers are all too familiar with the pupil who maintains, with all the power at his command, that his ratings are unfair, prejudiced and altogether too low, giving an entirely incorrect record of his actual achievement.

In the very great majority of such instances the parent, or surely the teacher, if he will take the time, can explain the ratings to the pupil's entire satisfaction and such time is often very well spent in doing this. However, this but illustrates the necessity for training pupils to form a correct estimate of their own success or failure in the work at hand. How can we expect a deficient pupil to improve in his daily class work if in his own

estimation that work is already highly satisfactory? Our school reports, if they are the result of careful and painstaking study on the part of each teacher, can and do perform a very distinct service in checking up the pupil's estimate of his own success, and the parent owes it to his child to support the teacher's ratings.

To the teacher, too, these periodic reports are especially valuable in that they require him periodically to take stock of his own work and of his own success as a teacher. Though some teachers take pride in being "hard markers," and promote, as a proof of their own thoroughness, a comparatively small portion of each class they instruct, still the wise teacher knows that there is a direct relationship between the number promoted and his own skill in teaching and is, therefore, genuinely interested and greatly helped by the periodic report which is sent to each pupil's home.

Every one connected with the school which a pupil attends may therefore be benefited by the periodic reports which the school may send out—the parents gaining information as to their children's progress, the pupils gaining the ability to estimate more correctly their own success in school and the teacher gaining a better idea of his own work of instruction.

It does not, however, follow by any means that any kind of a report, or even that the usual home report card, can and does secure these advantages. To be sure, a poor report-card may be better than none, but it is easily possible for a report-card to give incorrect, faulty, or imperfect information that will do as much harm as good to the three parties most concerned.

Restricting ourselves for the time wholly to school reports in the major subjects of study—English, Mathematics, History, etc., etc.—we find that until recently the

customary form of report has been a percentage mark as "Reading 79%, Grammar 73%, Composition 77%, etc., etc. The report-card carried the information, or the parent was supposed to know, that 70%, for example, was the passing mark. From the report-card therefore the parent might gain some idea of his child's distance in "points" either above, or below, that pre-announced percentage which served to indicate failure.

When students of education began to make a study of school ratings, they at once discovered that the percentage ratings of general class work supplied a picture of rating accuracy that was grossly exaggerated. Even in the correction of written examination papers the most accurate of all school ratings, it was found that three or four teachers, marking the very same paper, might easily vary as much as the difference between 55% and 75% in their estimates. Indeed it was shown that the very same teacher, marking the very same examination papers after a lapse of several days or weeks, might easily vary at least ten percent in his estimate of the same pupil's written answers. How much greater, therefore, could be the error in estimating a pupil's achievement in class-room work, consisting, as it may, of recitations, blackboard work, home study, special assignments and, possibly, laboratory work, or class excursions. If a written examination cannot give an accurate statement in a percentage rank, how much less can a teacher sum up all those various elements combined in "class work" and give them a percentage rank that is a true measure of the pupil's achievement.

It was shown by those who specialized on this investigation that as for example between ratings of 75% and 80% in any subject, there was, as a rule, absolutely no actual difference whatsoever in terms of the pupil's real

achievement. Indeed, the best that could be said for any percentage mark showing the pupils' class-room progress, was that it gave a rough approximation of the pupils' actual achievement.

As a result of this awakening, students of education proposed the plan of group marking which has more and more come into general use. By this plan, pupils are given a letter or a number which shows their membership in a class-room sub-group of pupils more or less alike in school success. The symbols are usually either numbers or letters, such as, 1, 2, 3, 4, (5); or I, II, III, IV (V), or A, B, C, D (E). A certain number or letter is selected to indicate failure usually 4, IV, or D, while the preceding marks in the sequence are supposed to indicate increased success up to 1, I, or A, which is the highest rating obtainable under this system. The merits of this group marking system consist chiefly in the fact that both parents and pupils are no longer misled by ratings that appear to make most accurate statements, while, in reality, they may record something quite different. An added merit in the adoption of the group mark lies in the blow it has given some few hair-splitting teachers who were wont to make distinctions in rating between pupils even so closely graded as 72.3% and 72.4% and other utterly absurd distinctions.

Therefore, if our aim is to give parents, pupils and teachers a really accurate picture of the pupils' progress in his school work, we shall be obliged to revise our "home reports" very greatly. It is but natural that the proposed improvement in home reports should be adopted more readily in the junior high school than in schools more bound by custom and tradition. Moreover, the classification of pupils into homogeneous speed groups lends itself more readily to a new rating plan than does

a classification based on other considerations alone. But first let us consider some further very obvious defects that may easily exist in the two older systems of rating pupils.

In the first place, we may have assumed that for any definite class and pupil the rating "Arithmetic 60%" had a very exact significance. This assumption may be based upon our belief that in this class a child of average ability might secure a rating of "Arithmetic 100%," if attentive and industrious. The parent, at least, has no very definite idea of the particular requirements upon which this rating is based and will usually assume the 100% possibility for his child. There are, however, very many factors usually neglected by the parent that enter into the "Arithmetic 60%" that we are considering. If the teacher has based this particular rating upon work so difficult that the class average in arithmetic at this time is 50%, then the rating of 60% is not the low rating its numerical value would seem to indicate. If it should happen for the month or so which this rating is supposed to cover, that the *highest* rating secured by any pupil in this "average" class was 60%, then the apparently mediocre, or disgraceful, rating of 60% really indicates phenomenal success on the part of the pupil who won a 60% rank for the period. If, on the other hand, it should happen that the work for this particular period was so simple that the class as a whole secured ratings in arithmetic above 90%, then a single rating of 60% would call for the parent's immediate and serious condemnation of his child's lack of application to school work.

To be sure, it may be maintained that our school work should be so graded that there should be no such fluctuations in difficulty as we have portrayed, to the end that 60% should mean exactly 60% of the possible 100% within

reach of every average pupil. Yet, however much we may desire such a grading of work, we are still so far from reaching even a rough approximation of a week-by-week grading in difficulty, that we are obliged to give up hope for the present of securing such a permanent arrangement. Indeed, even if the work itself could be graded so perfectly in difficulty as to appear to give each percentage rating the hope of becoming a genuine approximation of true school success, there would always be other factors to reduce its credibility. A national holiday, a school entertainment, a school baseball game, even a close inter-class athletic contest might easily sway the class average in any subject away from that perfect mark which uniform grading might otherwise have made possible.

What is true of the general unreliability of the picture presented by a percentage rating applies also, though to a lessened degree, to the numerical or letter ratings, which are, after all, but groupings of percentage marks. The rating 3, III, or C, after all, usually means that the pupil with such a rating is given a percentage mark somewhere between 60% and 70% in his subject. Therefore, under conditions already described, namely, a very difficult or an extremely easy examination, there might easily be class situations where a rating of "C" might indicate either a very good or an extremely poor month's work, depending largely upon the ratings secured at this time by our pupil's own classmates who were given similar tasks and similar instruction in preparation for this same test.

After all, is it not the *relative standing* of a pupil, *a statement of his work compared with his classmates*, that is of most value to the parent, to the pupil himself and to his teacher? If we, as parents, wish to judge our child's

progress in school, is not the best indication of that progress some rating to show us whether our child is leading his class, keeping up with the class average, or falling behind the others of his group? Ought we not to be informed how our child compares in work with other children who are attempting to do the same work as our child under, on the whole, the same conditions of teacher, grade and class. If we are told that our child's progress is rated II, or B, we might form a picture of his success that would be greatly modified if we happened to learn that even the poorest students in his class likewise were rated B at the time of that report. Similarly, if our child is rated III, or C, we may be led to punish him for neglect of duty and then be astonished by finding out, after inquiry at the school, that the hardest working pupils received no higher rating than III, or C, on that report. Such things have happened and do happen over and over again.

I remember well one earnest and painstaking teacher who thought to make her pupils also earnest and energetic by rating them all as "D," or failure, on their first report of any school term. Having thus scared her pupils with fear of failure, she gradually, report by report, advanced their rating from "D" to "C" to "B," until at promotion time practically all were rated "A" and finished in a blaze of glory. For the parents of the pupils in this class there never was a time when the report card had any genuine significance. Few of her pupils were ever "D" and fewer still were ever "A." There are still teachers who find scaring the pupils, or their parents, by unduly severe reports a more or less effective way of getting home lessons attended to. That conscientious parents are being tricked into punishing their children unnecessarily and wrongfully may never have entered such teachers' heads—the

one idea on this subject that had entered and remained there was that reports to parents could be manipulated so as to secure better results for the class as a whole than could be obtained without such reports. However, as parents we have both the right and the duty to receive reports that give the truest possible picture of our child's school progress. If we are ever to receive such a picture it must be worked out on some scientific mathematical basis that permits of little doctoring, however praiseworthy be the motives behind such manipulation of the ratings we receive.

The system of relative rating not only gives a more accurate picture of the actual situation in which our child is placed, but over and beyond this, such a system lends itself not at all to the manipulation that other systems permit. The system of relative ratings is, beyond any reasonable doubt, the most accurate, as well as the most fool-proof system, yet employed.

For the pupil, likewise, the rating which gives him an idea of how he is keeping up with his fellows is of more value to him than would be a rating made by comparing what he does do with some purely abstract standard which the teacher, or superintendent, puts down as a theoretical 100% of work he should do, but of which the pupil himself can at best have but a hazy idea.

For the teacher, as well as for the parent and the pupil, the value of assigning relative ratings is very great. One value to the teacher lies in the emphasis laid upon offering only such work and instruction as is within the range of his pupils' actual power of achievement. An accompanying value is in the emphasis placed upon the human, rather than upon the text-book, phase of recording school standing. If the teacher has a certain number of facts, processes, or pages, to be covered in a

month's time, it is comparatively easy, under the old plan, to penalize by a low rating all who fail to secure a pre-determined percentage of these facts, processes, or pages of text. But this low rating may, after all, be simply the result of the teacher's own failure to properly introduce, develop and review the facts in question. The pupils who receive, as a class, more or less uniformly low ratings, may easily be the innocent victims of poor instruction.

However, with the lash of low ratings taken out of his hands, the indifferent teacher is forced constantly to check up and revise instruction so that his class is led daily to attempt only such new work as is, under his more skillful guidance, really within the mental range of his pupil's possibilities. For each of the teacher's pupils, the major question becomes "*How is John Jones keeping up with his class?*" The expert teacher is, as a result, more free to plan work for his class as a whole and less hampered by having to make judgments whose accuracy he himself holds in question. This might seem to foster an undesirable change in the teacher's attitude by taking his attention from the individual and placing it upon the class and it might easily do so if our classes were not graded in homogeneous speed groups. Yet, where the teacher is assured that his pupils are about equal in capacity, the most helpful general information he can secure concerning any one pupil's individual progress is how that progress compares with the progress of the others in that pupil's class.

For over four years at Speyer Experimental Junior High School, we have been using *relative ratings* in recording our pupils' progress in their subjects of study. As a result of our experience, we find that parents, pupils and teachers are so thoroughly committed to this

new form of rating that a return to one of the older systems would be unthinkable.

For all our reports to parents we use the terms—Average, Above Average, Below Average, Excellent (very much above average), Failing (very much below average). To secure these ratings, we arrange our pupils roughly upon the distribution of normal probability for a class of 34 children in the same homogeneous speed groups, as follows:

<i>Symbol</i>	<i>Relative Rating</i>	<i>No. of Pupils</i>
1	Excellent (Very much above average) ..3	
2	Above Average	5
3	Average	18
4	Below Average	5
5	Failing (very much below average)	3
		<u>Total 34</u>

Whether the class as a whole does "good" or "poor" work, based on any abstract consideration of the work for the period covered by the report, the relative ratings are rarely varied in so far as concerns the number of pupils rated "Excellent," "Above Average," "Average," "Below Average," "Failing." Occasionally, for particular reasons, the number of "Excellents" may drop to 2, or rise to 4, the "Above Average" may drop to 4, or rise to 6, etc., etc., but, by and large, the number of pupils receiving similar ratings holds very closely to the distribution shown for 34 pupils, i. e., 3, 5, 18, 5, 3.

Based on this distribution, the parent is able to tell at a glance how his child's work is keeping up with the work of the others in his class. If his reports show success, by ratings of "Excellent" or "Above Average," the parent has every reason for satisfaction. If the report shows "Below Average," or "Failing," there is plain evi-

dence that some remedial action at home or at school is called for. If the report shows "Average," the parent's reaction will depend largely upon his own ambitions for his child's success in school. At any rate, the parent knows far more accurately than ever before the quality of work his child is doing in school. The card carries home no false picture of success or failure — the difficulty of the work itself is discounted in advance — the one big picture presented is that of his child doing the school work at hand better or worse than similar children do it under similar conditions, and this, after all, is the picture that means the most to each father or mother of a child in school.

There may be some who will oppose the system of relative rating on the ground that it is too vague, giving no exact picture of the pupil's progress toward that abstract accomplishment "promotion" at the term's end. To them we may answer that if promotion is genuinely within reach of that pupil's possibilities, he will reach it more surely when encouraged by relative ratings than he will if discouraged by a system which holds him to a standard he cannot understand and emphasizes "working for marks" as against working to do his coöperative part in the daily tasks assigned to his classmates. When class progress depends upon the class average, there is an urge that every normal boy feels to avoid being the cause of his classmates' retardation by falling behind the group. Just as in the Great War, our boys proudly "walked their legs off" rather than lose their place in their marching company, so our smaller boys in school will usually put new effort and energy into their school work rather than be left behind by the average group of their advancing classmates. Surely this desire to "keep up with the procession" will be a more worthy motive for effort than

"working for marks" might have been under the older system.

Again, it may be claimed that relative rating is unethical in that it makes it possible for one pupil to gain by pulling down another. While this is unquestionably theoretically true, I have seen no sign of it in four years of study of relative rating; that we might expect to find some signs of it is wholly reasonable, but certainly it is hard to find such an attitude either in the pupils' preparation of their home lessons, or in their recitations in the classroom. Undoubtedly, there are some depraved pupils in every large group who would not hesitate to advance themselves by hastening another's failure, but in the normal healthy group of an average public school, boys have too much respect for the power of public opinion as evidenced by their classmates to make any such despicable attempts. On the contrary, if there is any deviation from the customary attitude toward school ratings, it comes from a feeling on the part of the very great majority of co-partnership in the progress of the class. Whereas before, "the class work" went on whether pupils failed or passed and no pupil or group of pupils could put up his hand to arrest this work in its inevitable progress toward "a month's work" or "a term's work" or "a year's work," now we have something that is measured by what the average of the class can do, and so each pupil assumes a certain share of responsibility in measuring the rate of progress of his classmates.

Let us frankly admit that there are classes here and there that, by a process of intellectual sabotage may strive to delay their work unduly at certain times, so that to be an average pupil is more easy than it would have been if all had worked sincerely. These classes furnish a real problem, that for the present seems to have no

better solution than the planning of more interesting daily work and the securing of better parental coöperation with the subject-teachers.

Yet for the sake of these isolated classes, we would not give up the many unquestioned benefits secured by the new system of pupils' marks, any more than we would restrict the advantages open to all normal citizens because a few are criminal *insane*.

Moreover, this form of relative rating is so simple when once thoroughly understood that it lends itself to other uses than that of the periodic report to parents. I have seen, for example, a class of pupils in English Literature so well trained in estimating their own and their fellow's relative ratings that in more than nine cases in every ten, neither the teacher nor I could improve on them. In such a class it was the custom occasionally to hold a review recitation where each pupil was called upon to answer a definite question chosen from a carefully prepared list of questions, approximately equal in difficulty. After each uninterrupted answer, the class was called upon to vote by a show of hands into which of the five groups—Excellent, Above Average, Average, Below Average, or Failing, the pupil should be placed. As I have already indicated, the *majority* of the class almost never made an incorrect judgment. While such class ratings were never accepted as absolute, the very experience in rating was of great value to the pupils who did the rating, as well as to the one or two pupils among those rated who were habitually inclined to appeal from the teacher's ratings as unjust and unfair.

Indeed, I would unhesitatingly recommend that some recitations in every subject be devoted to training pupils to estimate their own relative success in the work at hand. The pupils may be trained to see that they

cannot improve their own ratings by over-valuing them, but rather may lower them by showing a poor appreciation of their relation to such an answer as the average pupil in the class might be expected to give. This better knowledge of relative values may and does serve to awaken to the realities many a pupil who was formerly self-satisfied, though doing below average, or still poorer work.

A reproduction of the report-card used at Speyer School is appended for those who care to study it.

[FRONT]

REPORT OF _____

ADDRESS _____

CLASS							
Cl. Teacher							

Speyer Experimental Junior High School
SUPPLEMENTARY REPORT CARD

CHARACTER	I	II	III	IV	V	VI	VII	VIII
PREPARATION OF HOME STUDIES								
ATTENTION IN CLASS								
HONOR — RELIABILITY								
CONDUCT — MANNERS								
CONDUCT — SELF-CONTROL								
CARE OF PROPERTY								
SERVICE — SCHOOL SPIRIT								
EVIDENCE OF LEADERSHIP								
NUTRITION								
STUDIES								
ENGLISH (Literature, Composition)								
MATHEMATICS (Arith., Geom., Algeb.)								
FRENCH								
NATURAL SCIENCE (Biol., Gen. Sci.)								
SOCIAL STUDIES (Hist., Geog., Civics)								
PHYSICAL TRAINING — HYGIENE								
ART								
MUSIC								
TYPEWRITING								
BOOKKEEPING								

SYMBOLS FOR RATINGS

Highest Rating 1, Means Excellent
Second " 2, " Above Average
Third " 3, " Average
Fourth " 4, " Below Average
Fifth " 5, " Failing

[REVERSE]

REPORT TO THE PARENT OF

Department of Education, City of New York

Speyer Experimental Junior High School

(ANNEX OF P. S. 43, MANHATTAN)

94 LAWRENCE STREET
NEW YORK CITY

JOSEPH K. VAN DENBURG, Principal

Dear Sir:

The pupils of Speyer School are arranged in classes according to ability. In the..... Grade, there are..... classes.

The marks assigned in the several subjects show the pupil's standing in his class, and indicate achievement and ability to proceed with the work of that class.

SPEYER SCHOOL aims to prepare exceptionally bright and industrious pupils for advanced standing in the High Schools. Each pupil has the opportunity of completing three years' work in two years. Mere attendance at Speyer School does not insure this saving of time. The opportunity is open to every industrious pupil; but no guarantee is given that the pupil will save a year through mere attendance at SPEYER SCHOOL.

Only those pupils who show average, or higher, ability in Classes 1 and 2, or above average in Class 3 of this grade may be considered as showing promise of entering the Second Year of High School.

Regularity in attendance, attention to class-room instruction and faithfulness in home study, are essential to successful achievement. Neither social engagements nor employment should prevent the pupil from giving at least **one and one half hours'** attention each day to home study.

The health of the pupil is to be conserved through outdoor exercise, plain, nourishing food and plenty of sleep.

Very truly,

JOSEPH K. VAN DENBURG.

Sample Signature:

I have carefully studied all the ratings given on the other side of this report card

DATE	CLASS	DAYS ABSENT	TIMES LATE	PARENT OR GUARDIAN
I				
II				
III				
IV				
V				
VI				
VII				
VIII				

QUESTIONS

1. Of what value should a pupil's marks be to the pupil's parent?
2. Of what use should these marks be to the pupil himself?
3. What factors make the usual school mark very unreliable?
4. Why are hair-splitting ratings useless?
5. When may a rating of 60% show a high standard of achievement?
6. When may a rating of 80% show a low standard of achievement?
7. What is the value to a pupil and to a parent of showing "how the pupil is keeping up with his class?"
8. What unfair use is sometimes made of school ratings?
9. Why is a system of relative rating the most accurate and the most honest system available?
10. What should be the usual distribution of relative ratings in a class of 34 pupils? Of 24 pupils? Of 40 pupils?
11. Plan a model report card.

CHAPTER XIX

PUPIL SELF-GOVERNMENT

Experiments in the self-government of adolescents we know to be as old as ancient Greece where the youth were encouraged to prepare themselves, through membership in the Epheboi, for self-government among themselves, as a preparation for not far distant citizenship. From then until now, there have been here and there more or less sustained efforts to provide some means by which pupils still in school might be given some experience in governing themselves, both as an aid to the development of their own moral character at the time and as a preparation for a more intelligent and fair minded citizenship when they have arrived at their maturity.

So far as recent experiments have been concerned the success of all our American efforts appear to have been indissolubly bound up in the personality of some one man or woman who by virtue of his or her personal magnetism, judgment, tact and enthusiasm was able to put in operation a plan of self-government that appeared to succeed so long as this one controlling personal force was quietly, but powerfully exerted upon the pupils who were trying the experiment.

We have most of us seen in recent years more or less elaborate School Cities in operation, working smoothly and efficiently to the evident delight of both pupils and teachers. We have also, most of us, seen these School cities collapse as a pricked bubble when the power behind the throne was for any reason withdrawn.

The valid criticism of many who refuse to put in operation any system of pupil self-government is that all such systems are more or less patent frauds perpetrated upon more or less unsuspecting pupils. Such critics hold truly that if it ever comes to a show-down the pupils must learn that they cannot in honesty and in truth be permitted to govern themselves.

The more elaborate the system of self-government the more complete is apt to be its collapse, when, sooner or later, a case appears where the will of the pupils as expressed by their elected representatives comes directly into opposition with the will of the principal, his teachers or the higher school authorities.

And yet every one who has the complete education of adolescents at heart is either secretly or openly searching for some plan of self-government that will endure the test of time and prove its fitness to survive even when the single personality that puts it in successful operation is withdrawn. So far as we know there has been no plan yet devised which has proved its complete adaptability under all conditions of stress and strain and yet in very recent years notable advances have been made in the self-government of adolescents.

We will all agree that self-imposed ideals of conduct are the only ones of permanent value. To be sure, the youth who has had instilled into his mind and heart a fear of breaking the law of his school or of his community may be on the road to a highly moral citizenship. The fear of God is the beginning of wisdom and the genuine fear of wrong-doing while yet it may be only a fear of punishment, still often serves to keep the possible offender in the paths which society has laid down for him. If we may begin with the *fear of God* as a deterrent from moral delinquency and lead from that

to the *love* of God as a basis for compliance with the laws our fellows make for us, then we may reach the true goal of moral training. However, if we both begin and end with fear as a deterrent, sooner or later the fear may be outgrown and there is nothing left except such habits of rectitude as may survive when the fear of punishment is withdrawn.

In school we have had, and still have, the fear of the teacher, and when the teacher fails the fear of that dread person, the principal, as a deterrent to frighten into submission the possible offender. In school we also have the love of the teacher and perhaps even the love of the principal serving to make the pupils eager to win and hold that love by abstaining from any action which might give the teacher or the principal disquietude or sorrow.

In school we do find, though more rarely, pupils who are striving to do the right thing and to avoid the wrong thing because they are controlled by self-imposed ideals of conduct which serve by acting upon their own self-respect to make them honestly eager to do the right thing at all times whether observed or not. However rare may be the cases of pupils who at all times and under all circumstances act in compliance with such high motives, still no plan of self-government will succeed which does not assume the *possibility* of such an ultimate condition for all the pupils of any school. And yet any plan which assumes the *probability* of any such conditions becoming general, is even more surely doomed to failure.

If, without binding ourselves to the acceptance of any theory, we merely assume that our pupils resemble in the adolescent strivings toward self-government a type not far different on the whole from the members of some partially civilized race, we may be nearer a solution of our difficulties than if we assume them to be little twenty-

eth century citizens awaiting only the necessary years for complete absorption into our present-day civilization.

A plan which assumes only *the possibilities of growth* to a fully civilized state has at least the merit of not expecting much of its young members, while on the other hand, a plan which endeavors to force the forms of adult self-government upon immature adolescents is apt to meet with no more success than would accompany an attempt to put any half-civilized race upon a truly modern representative self-governing basis.

Other things being equal, those plans of government which in the evolution of civilization have proved their fitness for the partially civilized, may on the whole most nearly approach our adolescent needs. The recapitulation theory may be abandoned, but from it we may still salvage much to help us here, for surely there is a parallelism between the savage and the adolescent, whether or not it be purely accidental.

Through the possession of some special qualifications of strength and skill and insight the savage leader first gains his position of authority; later his descendants by physical, mental and material inheritance may establish an hereditary monarchy of small or great proportions, but at the beginning there is no line of succession and the field is open to any man *who can lead*. This leader shows in his person and in his conduct traits of character to which all the tribe aspire, but which on the whole they as individuals do not personally possess. Possibly without formal choice or election the man who most nearly represents in his person the aspirations of the tribe or clan becomes at first informally the leader of the group.

So in the voluntary associations of modern adolescents the youth who most nearly represents *the kind*

of fellow that all would like to be, becomes without any formal election, the acknowledged leader of his coterie of friends. When the aspirations of the group are toward crime, as they unfortunately sometimes are, the gang leader is he who most nearly represents the daring criminal that each of the group earnestly desires to become. When on the other hand, the aspirations of the group are toward the highest ethical development that their racial progress makes possible, their leader will be one who most nearly in his person embodies the aspirations of this rapidly developing group.

The aspirations of boys and girls of junior high school age, are but slowly developing toward unselfish and altruistic ideals. The normal youngster of ten or eleven is in many ways remarkably like a savage and not a high-grade savage at that, however lovable individually he may actually be. As a candidate for self-government he is infinitely inferior to a wild tribesman of the Congo. Any form of city or state government by ten-year-olds is simply unthinkable, and yet it is upon children not much higher that we of the junior high school must build our rudimentary beginnings.

The first step toward self-government, if our cursory review has led us correctly, is the gradual establishment of *a unity of aspiration* in the minds of our pupils. Here we may later seek to implant other ideals which we hope for, but we must build our work upon aspirations that normally and really exist in the minds of a majority of healthy youngsters of adolescent age.

Not long ago a considerable cash prize was offered for the most normal and natural code for boys of adolescent age. The winner's code was published and was found to agree in almost every detail with the laws of the Boy Scouts of America (and of the World). Probably

no better code of boy-morals exists than that of the Boy Scouts.

A plan that has been tried and found successful has for its fundamental basis the Boy Scouts Laws. This is the body of aspiration which the school endeavors to build upon and to use in creating the growth toward self-government. This plan of self-government in its inception makes the entire school a modified and adapted Boy Scout troop. It selects for leaders (a most coveted and eagerly sought-after honor) those boys who in their person, in the judgment of teacher and pupil, most nearly approximate the description of an ideal Boy Scout as stated in their creed.

Such a creed when adapted for the use of the school may read as follows:

The Speyer Creed (as adopted unanimously by the boys of Speyer School):

1. A Speyer Boy is Trustworthy

His honor is to be trusted. If he were to violate his honor by telling a lie, or by cheating, or by not doing exactly a given task, when trusted on his honor, he is not a real Speyer boy.

2. A Speyer boy is Loyal

He is loyal to all to whom loyalty is due—his teacher, his home, his parents, his country.

3. A Speyer boy is Helpful

He is ready to help persons in need at any time, to share the duties of home and school. He does one good turn to somebody every day.

4. A Speyer boy is Friendly

He is a friend to all and a brother to every other Speyer boy.

5. A Speyer boy is Courteous

He is polite to all, especially to women, children, old people and the weak and helpless.

6. A Speyer boy is Respectful

He respects and obeys his parents, teachers, leaders and all other duly constituted authorities. He respects the convictions of others in matters of custom and religion.

7. A Speyer boy is Cheerful

He smiles whenever he can. His obedience to orders is prompt and cheerful. The harder the task the gladder his heart!

8. A Speyer boy is Thrifty

He does not destroy property. He works faithfully, wastes nothing, and makes the best use of his opportunities. He saves his money so that he may pay his own way, be generous to those in need and helpful to worthy objects.

9. A Speyer boy is Brave

He has the courage to face danger in spite of fear, and to stand up for what is right against the coaxings of friends or the jeers or threats of his opponents and defeat does not down him.

10. A Speyer boy is Clean

He keeps clean in body and thought, stands for clean speech, clean sport, clean habits and travels with a clean crowd.

No attempt can profitably be made to introduce all these ten desirable ideals at one time; indeed their original adoption took nearly an entire school year. One by one the various ideal traits were developed by the boys themselves and only seized upon for discussion and later adoption when presented by the boys acting on their own initiative.

Once formulated, however, the whole influence of the school — principal, teachers, parents, graduates, upper class boys — is brought to bear upon each new entering group as it is admitted. From the very start the new comer is made to feel that he is being admitted to a group where the older and wiser fellows have laid out an ideal for themselves which he as a new comer is bound to study and to gradually adopt.

If a school is to avoid being kept at work forever building up an ideal which never reaches a stage where it functions in the development of leaders, it must make sure that no end of pains be spent in soon converting each new entering group to the ideals of their older schoolmates. To that end a strong and powerful school tradition must be built up so that boys even before they enter will learn something of the ideals of the school of which they may become a part. Once the new comers are enrolled, a series of meetings is held at which the boys will be told NOT BY TEACHERS, but by chosen leaders among the older boys themselves, what the school creed is and how it came to be adopted. No end of trouble can be created by the over-zealous teacher who seeks to impose as HIS OWN the ideals which THE BOYS have adopted. The teacher's part is to give the older pupils such frequent opportunity as may be needed to put over the ideals they believe to be the worthy ones for all the school. Thus from the start the body of aspirations which we hope the new comers will adopt as their own, comes to them from one of their own kind, only one presumably older and wiser than they are.

The teacher must never be led into an argument on the school ideals in which he is put in the position of defending the ideals the school has chosen. If there are objections raised—and indeed they may be welcomed at the start—not the teacher, but a duly recognized boy-leader from the upper classes is the proper one to answer the objector. The teacher merely arranges the time and place for the necessary explanation. The teacher's position may be put in words as follows:

"The older boys of the school have selected for themselves certain ideals (and I know them by heart) which they think the best possible for all of us. As a teacher of this school I am in

honor bound to these boys to help them realize their own ideals, but for you new comers who have not subscribed to these ideals as yet, I can do nothing more than to give you the opportunity of hearing the older boys tell you why they have unanimously adopted these ideals for this school."

The teacher's other opportunity for advancing the school ideals comes in his selection of boys for various minor posts of honor who (in so far as he can discover the truth) appear to approximate in their behavior the ideals for which the school-body stands.

LEADERSHIP

Closely connected with the school Creed is the matter of leadership which is the one test of the success of the self-government plan.

If the boys select for their leaders those who will discharge their duties in the spirit of the Creed then everything possible has been accomplished. To safeguard the interests of the school each class teacher is given the right (which the wise teacher will rarely use) of suspending from office at once any leader whose actions seem to endanger the welfare of the class. Mere weakness, however, should rarely be a cause of suspension—not at least until the teacher has tried by every means at his disposal to develop the weak leader's highest possibilities of strength. If finally all efforts of the teacher fail to develop in the weak leader the qualities necessary for his success, the teacher may bring the matter to the attention of the class and ask the election of a new leader. In possibly ninety-nine cases out of a hundred the class will elect a new and stronger leader, but in the hundredth case the class may support the weak leader. In such a case the teacher may suspend the leader and report his reasons to the Leaders' Club where the better judgment of the selected group can be trusted.

Experience shows that no teacher worthy of his position in the school will ever fail of practically unanimous support in the Leaders' Club save in the one possibility of his actually being grossly in the wrong. In such a case we will all agree that he does not deserve and should not receive support from any source.

Before we discuss the Leaders' Club — the heart and soul of a self-governing adolescent school — we may briefly consider some of the leaders that a class may well select — and the duties with which these leaders may be charged.

But as we begin it is well to note that the teacher, while he does not participate in the elections, can strongly influence the elections for good by describing rather carefully the type of boy that in his opinion will best serve the class if elected to the position in question.

For the following partial list of leaders I am indebted to Mr. Abraham Rosenthal and to Miss Bertha Luchs who, with others at Speyer School, first worked out the positions and duties hereinafter described.

Positions	Boys
1. Class Leaders	2
2. Attendance Leaders	2
3. Home-work Leaders	2
4. Text-book Leaders	2
5. Room Leaders	2
6. Blackboard Leaders	2
7. Bulletin Leaders	2
8. Decoration Leaders	2
9. Coat Room Leaders	2
10. Two-minute Drill Leaders	2
11. Health Leaders	2
12. Excursion Leaders	2
13. Lunch Room Leaders	(number variable)
14. Hall Leaders	"
15. Reception Leaders	2

TO DEVELOP AND ENCOURAGE THE GROWTH OF ALL LEADERS

The best leader knows the "Speyer Creed," lives it, practices it and fights for it. He constantly emphasizes the importance of adhering to all that the Creed stands for. (Therefore the leader must know his Creed and understand it. The teacher must also know and understand it.)

The real leader is natural. He is at all times friendly, courteous, kind and respectful. "To help in advancing others" is his motto.

The thoughtful leader prepares his program of activities beforehand, so that he may at all times keep his class actively interested. He sees that no boy is wasting his time.

The resourceful leader meets the situation. He does not wait to be told what to do. An unforeseen situation is but another opportunity for testing his ability.

The helpful leader notices everything of interest to his fellows. He makes his class aware of what others are doing for the school welfare.

The able leader commands in a firm, distinct, "mean-what-I-say" tone. His orders indicate just what he wishes done. He sees that any orders that are given are carried out.

The wise leader is alert for suggestions that might improve his work. He often reviews progress made. He does not forget to thank those who have helped him.

The successful leader makes every fellow count as a link in the claim of his success. Only those fellows that demonstrate self-control, courage, clean-mindedness and practice of the Speyer Creed, are strong enough to be one

of his links. A weak link endangers his whole chain. Therefore he strives to bring every one in his class into earnest, active coöperation.

1. THE CLASS LEADER (AND VICE-LEADER)

1. At no time does the class leader's responsibility cease. He looks after the appointed leaders to see that each checks up his responsibility. He has the right to appoint assistants to help him in his work.

2. It is understood that the leader when not working actively falls in line with the rest of the class thus setting an example of coöperation. He is under the full authority of the leader in charge whether it be in class, on excursions, or at assembly.

3. At the class meeting each leader reports upon his work so as to give the group the opportunity to suggest whatever may strengthen the coöperative spirit and sense of responsibility of the class.

4. The president, who is the chief class leader calls a Class Leaders Meeting, under the supervision of the official teacher, once every fortnight for the purpose of checking up the individual leader in his attitude toward the responsibility he has undertaken. The purpose of this meeting is also, through the help of the leaders, to strengthen the authority of the chief leader, and if need be, to point out and eliminate weaknesses, that he may have developed.

2. ATTENDANCE LEADERS

1. Fill in attendance and absence on blackboard before 9 a. m. and before 1 p. m.

2. Rule up the section board according to a definite form.

3. Fill in the day's record in the Section Book.
4. Carry the Section Book from class to class.
5. Place it on the teacher's desk when class enters the room for period.
6. Give it to official teacher at noon and at 3 p. m.
7. Take minutes of class meetings and report at next meeting.
8. Take minutes of Leaders Meetings and report to class at its own class meeting, the work done.

3. HOME WORK LEADERS

1. Keep home work.
2. Examine and check up in book or chart the home work of each pupil.
3. Find out why the pupil has not done work.
4. Rouse student who fails to bring in work to do better next time.
5. Keep list of class in book or chart.
6. At class meetings report to class any boy who has failed to do his home-work twice in succession and also pupils having excellent records.

4. TEXT BOOK LEADERS

1. Keep a list of class on book or chart.
2. Check up the number of books that are brought to school — put cross against those pupils who fail to do this.
3. Check up books that have been recovered — put cross against those who have not recovered lost books.
4. Check up books that are labelled, cross those that are not.

5. Report at class meeting any pupil who has failed to live up to his duty twice in succession as well as those who have excellent records in care of books.
6. Report to class leader at end of month the record of each student in this respect. This report is to be made under the heading of responsibility.
7. Give credit to those pupils who use other helpful books in addition to the regular text-books.
8. Determine in what ways another text-book that is used, whether borrowed from the library or from a friend, is better than the one used at school.

5. ROOM LEADERS

1. Make a list of students that sit in their section.
2. At noon and three o'clock examine the aisles and desks of sections to see that desks contain no paper and that floor is clean.
3. Check up pupils who have clean desks and cross those that have not.
4. At class meetings give report on those that have excellent records and those who have twice failed to clean up.
5. Try to raise class standard of neatness—praise the excellent students and encourage them to do better.

6. BLACKBOARD LEADERS

1. Wash boards at noon and at three o'clock.
2. Clean board rubbers at noon and at three.
3. Put chalk and board rubbers away at noon and at three.
4. Erase whatever is on the board at end of period unless teacher wishes otherwise.

7. BULLETIN LEADERS

1. Provide a suitable bulletin board.
2. Collect material to be posted.
3. See that whatever is put on the bulletin board is in good form (well written, clean and worth while).
4. See that as soon as bulletin has lost its usefulness, it is removed from the board.
5. Make out all reports of class that are to be posted on walls of class room.

8. DECORATION LEADERS

1. Arrange all pictures, engravings, banners, plants, etc., neatly in simple manner and pleasing to the eye.
2. Encourage the bringing of wall decorations, window curtains, pictures, vases, stands, plants, flowers, etc., to make the room cosy and attractive.

9. COAT-ROOM LEADERS

1. Keep coat-room and closets neat and clean.
2. See that everything is in proper place.
3. Take stock of supplies and inform the teacher when supplies are needed.

10. TWO MINUTE DRILL LEADERS

1. Give orders with spirit for the drill.
2. Give command: pause; count.
3. Drill — Breathing.
 Stretching
 Bending
4. Set a high standard by *accepting* only the best.
5. Check up the best and cross those that need improvement.

6. Arouse the class to high standard of work.
7. Vary the exercise with the permission of the Director of Physical Education.

11. HEALTH LEADERS

1. Arrange alphabetical lists of class in note book.
2. Examine pupils every morning before nine o'clock — watch for combed hair, clean ears, clean necks, clean hands, clean finger nails, clean clothes and shined shoes.
3. Check up on points under (2) in book.
4. Make wall chart of points in book.
5. Check up class records on this chart every week.
6. Report at class meetings the students having excellent records and those who have failed more than twice in succession.
7. Talk things over with boys or girls who have failed in hygiene or those who are Nutrition 3 or 4.
8. Try to arouse class to high standard of personal hygiene.

12. EXCURSION LEADERS

1. Collect money from each pupil in each group.
2. Give money to head leader or teacher.
3. Arouse the group to a sense of gentlemanly behavior when on the street, on the cars, at the place visited.
4. Impress upon the group to be inconspicuous, to talk softly, to enjoy themselves, to sit quietly in the cars, to be friendly and to remember fooling and fighting are entirely out of place.
5. Keep the group together; see that nobody lags behind to buy something.
6. When the destination is reached see that the group follows the instruction of the teacher.

PUPIL COÖPERATION IN THE WORK OF THEIR LEADERS

1. If a lack of coöperation is evidenced by the class toward any leader, that leader, if he has handled the situation to the best of his ability, and has been unsuccessful, promptly reports the condition to the class teacher.
2. The teacher discusses conditions with class to discover the cause of the disturbance and why it is failing to coöperate with its own freely chosen leader whom it promised to support.
3. Gross or persistent disorder on the part of individuals is referred to the Leaders' Club.
4. By constantly calling the attention of the class to what Speyer Spirit stands for and means, the careful leader forestalls any attempt at disorder. He does not fear the trouble maker but courageously calls to his attention the possible results of a lack of coöperation.
5. In all cases of discipline the leader acts with decision and promptness, first, making sure that he has isolated the individual offenders, second, that he knows exactly the nature of the offender and the offense. As a rule he does not deem it wise to punish the class for the misconduct of individuals.

OBSERVATIONS FOR MARKING BY THE LEADERS

1. Each leader marks the pupils according to how they live up to their responsibility under his particular supervision. (Home work, books, health, etc., etc.) "1" or "2" for excellent, "3" if it is passable, but is not up to the highest standards, "4" if not satisfactory, and "5" if extremely defective.
2. Control is checked up by the class leaders (halls, dismissals, class unsupervised, etc.)

3. All leaders at end of month give average mark of pupils to class leaders who average all and give the teacher the final mark for each student.
4. The Bulletin leader makes an honor roll containing names of the excellent. This list is placed in the class room.
5. Students listed for five consecutive months receive due credit towards Speyer "S" (elsewhere explained).

FOR THE TEACHER

Growth of the Leader

1. Sum up the elements of leadership to your class. Give some concrete examples wherein the qualities you deem most desirable will prove of benefit, viz.: ability along certain lines, impartiality, poise; stress the ideals of an ideal Speyer boy.
2. Do not yourself designate any leader. From your description the class may choose the boy embodying the qualities of leadership. Do not be discouraged if your choice is not elected. His unpopularity may be fully warranted for some reason unknown to yourself.
3. Make the defeated candidates for leader feel that the nomination itself was an honor. The real test of their ability is through the opportunity for hearty, active, coöperation with the elected members whom they as assistant leaders play a major part in aiding.
4. Make your platform unmistakably plain. The leaders of their choice, whom they promise to respect, obey, coöperate with in every way, are to have the full support of the Faculty and the leaders of the entire school. A leader betraying his trust, or a pupil who is not co-operative, should find himself arrayed against every leader, pupil and Faculty member.

SELECTION OF RESPONSIBILITIES

List each boy in your class and analyze each individual's traits, characteristics, positive elements. Determine the desirable activities that you think he can do or would like to do; find some work for him that will keep him busy and at the same time develop a desirable quality. Continue to add responsibility as long as he secures the desired results. Be exacting and demanding. Take into consideration any physical defects, weaknesses or peculiarities, assignments from other teachers, demands at home, neighborhood associates. Counteract or utilize their influence. (See caution below.)

ASSIGNMENT OF RESPONSIBILITY BY THE TEACHER

1. Assignments of various responsibilities of the various leaders are a test of your appreciation of the leaders' capabilities.
2. Each leader is given unmistakable instructions for which he is held strictly accountable.
3. No dispute should arise as to the functions delegated to the various leaders, for each leader knows just what he should do.

THE SUPPORT OF THE LEADERS BY THEIR CLASS AND CLASS TEACHER

1. The class helps the leader carry out the responsibility he has undertaken. It understands that work is necessary for success.
2. Consider nothing permanent. There is always room for improvement.
3. The teacher who has every pupil strive to help

the class leader is himself more efficient. The aid of the ablest, most coöperative and loyal group of assistants has been gained.

4. The teacher always supports the class and the leader. The game of leadership is fair and hard, but is in itself the greatest reward.

5. The teacher is firm and exacting in demands at all times.

6. Coöperation and harmony exist by having a real acquaintance with each individual pupil.

7. The able teacher maintains the smooth temper, a spirit of enthusiasm and optimism and though dignified and firm, is always approachable.

CAUTION.

No one pupil carries too many responsibilities. With the exception of the Class Leader no pupil carries more than *one* major responsibility. Each pupil, so far as possible, is delegated to do something. ($14 \times 2 = 28$ offices).

APPARENT LACK OF LEADERSHIP, OR FAILURE IN THE PLAN

1. Do not forget that "boys is boys," inconsistent, irrepressible, full of mischief, boisterous, emotional and sympathetic.

2. The weak leader is given the opportunity to develop strength. Keep after him, help develop his responsibility; we must assist him till he becomes strong enough to work alone.

3. The coöperation of the teacher is very necessary. Responsibility cannot be given to the pupil, who may be expected to carry out what he is told to do without able

supervision. The teacher follows up the leader at all times. Sympathy and understanding are strong factors in developing the leader. The situation is a very delicate one, for the boy must feel that *he* is carrying the responsibility. Be an optimist. Do not be discouraged by failures.

After some six years of experimentation the Leaders' Club of Speyer School — the pupil self-governing body — finally crystallized its rules of procedure in the constitution which follows.

Let it be understood that this constitution did not spring fully formed into existence — in fact, for three years or so the constitution of the Leaders' Club was an altogether sketchy and hazy affair dependent upon unwritten laws which were being built up quite as much, if not more, than upon any written charter. Even in its final form the constitution lays no emphasis upon *rights* of pupils to self-government.

The constitution then is submitted, not as a model of completeness in any particular, but rather as an interesting exhibit of the Speyer boy's idea of a working constitution for present needs, six years after the club was first organized.

THE CONSTITUTION OF THE LEADERS' CLUB OF SPEYER SCHOOL

Proposed, Ratified and Adopted, Feb. 23, 1921

ARTICLE I. NAME. This organization shall be known as,
"THE LEADERS' CLUB OF SPEYER SCHOOL"

ARTICLE II. OBJECTS. The objects of this organization shall
be

(a) To promote a spirit of coöperation between individual

and individual;

- (b) To promote a spirit of coöperation between individual and class;
- (c) To promote a spirit of coöperation between individual and school; all of which must lead to the coöperation of every pupil working for the highest ideals of scholarship, athletics and social activity in Speyer School.

ARTICLE III. MEMBERSHIP.

- Sec. 1. There shall be two classes of members:
 - (a) Class Leader Members.
 - (b) Petition Members.
- Sec. 2. CLASS LEADER MEMBERS shall be the two leaders (President and Secretary) elected by the members of a regular class.
- Sec. 3. PETITION MEMBERS shall be those pupils of the Speyer School who have been elected to membership after the following procedure:
 1. Application for Petition Membership in "The Leaders' Club of Speyer School" shall be presented in writing to the Chairman of the Membership Committee.
 2. The letter of application shall contain a brief statement or description of three "*conspicuously praiseworthy*" acts performed during the month preceding application, for the good of the class or of Speyer School.
 3. Each of the "*conspicuously praiseworthy acts*" is to be attested to by a member of the faculty, or by two members of the Leaders' Club" not more than one of whom shall be in the applicant's official class.

ARTICLE IV. OFFICERS.

- Sec. 1. The officers of the Leader's Club shall be,

1. President	3. Secretary
2. Vice-president	4. Treasurer
- Sec. 2. ELECTION OF OFFICERS. Officers of the Leaders' Club shall be elected and installed at the meetings held

during the last week of December and May. Officers of the Leaders' Club shall retain office until their successors have been installed.

Sec. 3. DUTIES OF OFFICERS.

1. The President shall preside at all meetings, unless prevented from doing so.
2. The Vice-President shall preside in the absence of, or at the request of the President.
3. The Secretary shall keep a record of the minutes of all meetings, and shall conduct correspondence for the club.
4. The Treasurer shall keep a record of all moneys received and disbursed, including the funds of the General Organization, and all other moneys that shall come under the supervision of the "LEADERS' CLUB." A member of the Faculty, designated by the Leaders' Club shall be Treasurer. It shall be the Treasurer's duty to submit a monthly statement to the Leaders' Club.

ARTICLE V. MEETINGS.

Sec. 1. A regular monthly meeting of the Leaders' Club shall be held at 3:15 P. M. on each Tuesday afternoon during the school year, except when Tuesday shall be a holiday, in which case, meeting shall be held on Wednesday afternoon.

Sec. 2. Twelve members shall constitute a quorum for all meetings.

Sec. 3. The Order of Business at regular meetings shall be:

1. Call to order by the Chair
2. Roll Call
3. Reading of Minutes
4. Treasurer's Report (Last meeting in each month)
5. Reports of Committees
6. Unfinished business
7. New Business
8. Election of Officers
9. Good and Welfare
10. Adjournment

ARTICLE VI. COMMITTEES.

Sec. 1. The only standing Committee shall be the Membership Committee. All other committees shall be appointed by the Chair.

Sec. 2. *The Membership Committee* shall be constituted as follows:

- (a) The four officers of the Leaders' Club.
- (b) Two members of the Faculty elected by the Leaders' Club.
- (c) The Faculty Adviser.
- (d) One leader from each grade elected by the leaders of the grade.

ARTICLE VII. RESIGNATIONS.

Sec. 1. Ungentlemanly conduct, lack of leadership, or absence from three consecutive meetings without excuse satisfactory to the Leaders' Club shall be considered just cause for requesting a member to resign.

Sec. 2. Any member of the Leaders' Club shall be forced to resign:

- (a) When he ceases to be elected President or Secretary of his class, unless thereafter he shall be regularly elected to Petition Membership.
- (b) On the written petition of three members of the Faculty.
- (c) On the written petition of one member of the Faculty with a majority of the leaders present at a regular meeting of the Leaders' Club.
- (d) By a three-fourths vote of the Leaders' Club.

ARTICLE VIII. AMENDMENTS.

This constitution may be amended when such amendment is proposed by two-thirds of the Class Presidents (upon the expressed will of the members of their classes) or by two-thirds of the members of the Leaders' Club; and when ratified by three-fourths of the members of the Leaders' Club, or by three-fourths of the pupils of Speyer School, provided, however, that no proposed amendment shall be ratified unless posted on the school bulletin board for at least one week before final action is taken.

ARTICLE IX. INITIATION.

It shall be required that every Class Leader Member, or Petition Member of the Leaders' Club shall subscribe to the following:

"I believe that a Speyer Boy should be Trustworthy, Loyal, Helpful, Friendly, Courteous, Respectful, Cheerful, Thrifty, Brave, Clean. "

As a pupil of Speyer School, and as a member of "The Leaders' Club of Speyer School," I shall consider it my duty,

- (a) To make every endeavor to live up to the Speyer Creed.
- (b) To set a good example to others, both in school and out.
- (c) To coöperate with my fellow-pupils in striving to do better those worthwhile things that I will try to do.

BY-LAWS

1. Each class shall elect a President, a Vice-President, a Secretary and an Assistant Secretary. The Vice-President shall attend meetings when the President of the class is unable to do so. The Assistant-Secretary shall attend for the Secretary in like manner.

2. No pupil shall make application for Petition Membership whose Report Card shows a record "below average" in a subject or in a personal habit.

3. The Membership Committee shall meet on the Monday afternoon preceding the last monthly meeting of the Leaders' Club, and shall draw up a list of nominations for membership, which list shall be voted on by the Leaders' Club, only at the last meeting of each month.

4. Before an applicant for Petition membership can be nominated by the Membership Committee, each of the acts presented as an evidence of leadership must be voted "conspicuously praiseworthy" by the members of the Committee.

5. A pupil who is rejected for nomination by the Membership Committee shall not make application again within one month of the date of rejection.

6. Upon vote of the members present at a regular meeting, the President of the Leaders' Club may order an offending member to leave the meeting. Such member shall not attend another meeting until a letter of apology has been read and accepted by the Leaders present at a following meeting.

7. The President shall have the power to designate the chairman of an appointed committee, but, if he shall see fit, he may direct the members of the committee to elect a chairman from among their number.

8. Upon the advice of the Faculty Adviser, the President in appointing a committee shall request a member of the Faculty to serve as a member of the committee.

9. The Treasurer shall make no disbursements, except upon vote of the Leaders' Club, and after the receipt of an order signed by the President and Secretary of the Leaders' Club.

10. The financial records and books of the Treasurer shall be audited during the first week in January, and during the first week in May. An auditing committee of three leaders shall be appointed. The chairman of the auditing committee shall present a report of the audit to the Leaders' Club at the meeting following the completion of the audit.

11. The election of Petition Members to the Leaders' Club shall be the first item to be considered under New Business at the last meeting of each month.

Finally, with all this formalism of constitution and by-laws, we must not forget that our boys, when natural, will behave as half-savage and we must make all due allowances for their possible lapses. Especially should we avoid beginning too early to codify or formalize our boys' efforts toward a system of self-government.

Indeed it may be better if we never work out a constitution or by-laws at all until there comes an insistent demand for them to standardize procedure. Far better to have our LEADERS' CLUB conducted by crude unwritten laws than to have it develop a group of little formal prigs who fail to represent what the pupils of the school really stand for in sincerity and truth.

QUESTIONS

1. Why have so many experiments in pupil self-government failed?
2. To be of the greatest value how must pupils' ideals of conduct be imposed?
3. What assumption may I make that will enable me to be more tolerant in my plans for pupil self-government?
4. What makes a boy a leader in his group of friends?
5. Where must I start to make my pupils select voluntarily the type of leader that I believe in?
6. What boys' code of morals and conduct is the best one I know of? Can I repeat it from memory?
7. What must I avoid in trying to have my pupils accept the code in which I believe?
8. How can my pupils be led without my direct interposition to select their leaders wisely?
9. How may succeeding groups be led to accept for themselves the ideals that earlier groups have built up?
10. Can I name ten leaders with their duties, that might be established in my class?

CHAPTER XX

TEACHER PARTICIPATION IN JUNIOR HIGH SCHOOL ADMINISTRATION

There is no real need in a discussion of junior high school problems to add to the natural complications of our study, the great problem of Teacher Participation in School Government. Yet if we are to make progress in all lines of school work as the result of our unique position as the newest and best type of all American schools, we must be ready to meet all the newer problems of education that may be presented to us for our consideration.

Surely an efficient, progressive, forward-facing junior high school can be organized and maintained today without involving ourselves in this problem of teacher self-government that the next generation will surely be forced to consider. However, as pioneers of modern times, we may nevertheless be losing an opportunity that because of our newness we are best fitted to grasp, if we fail at least to look over the territory that the next generation will surely open up for settlement.

So then if we decide to work-over this new field together, let it be with the full understanding that we need not do so for the success of our present junior high school administration, but rather because such an added survey may put us, or our successors, in a position to profit by our explorations and discoveries in meeting and settling difficulties that surely lie not so very far ahead.

There has been a great deal of discussion and some rancorous comment on the need of democracy in education. It has been claimed that most school systems are an autocracy of the least considerate type. The superintendent, or the principal, lays down the law and the teachers are supposed to emulate the spirit of the Six Hundred — "Theirs not to reason why — theirs but to do or die."

Yet we find from superintendents and principals come most of the concrete suggestions for teacher participation in school government. In nearly every section of this country superintendents are giving this subject of teacher participation considerable time and attention.

In discussing the theoretical effect of teachers' organizations, actual or possible, upon the administration of the schools of any locality, there seems to be a division of opinion depending upon two major points of view. A review, therefore, of these two opposing views may be worth while, on three proposed kinds of teacher participation.

FIRST, teachers' organizations should be perfected for the purpose of — *Influencing Public Opinion* — of informing, interesting and influencing the (local) public as to what school legislation is necessary. Members of those organizations should be school missionaries. Possibly they may become the nucleus of a non-partisan political party as a "school" party for influencing city government in school matters.

But teachers are not united among themselves, but divided by personal interests, personal grievances and personal ambitions; therefore they cannot present a united front. They are unwilling to make the effort or to spend the time to become truly acquainted with the social conditions of the parents for whom they work,

all of which is necessary for the success of such a movement. They lack a true social interest in the welfare of their local community; they are ignorant of the aims, ideals and aspirations of its pupils and their parents.

SECOND, teachers should form an important branch of the *Policy Forming* group of any municipal school system. The superintendents should be left free to execute these policies. For example, the curricula (syllabi of instruction) should grow from the class-room where the teacher is in immediate contact with those who are being instructed. Artisan teachers should have no power in teachers' organizations or in policy-forming bodies of teachers.

But most teachers work effectively at what they are *told* to teach; they have frequently no adequate knowledge of *why* they should teach the things they do. Therefore the judgment of the class-room teacher is not apt to be of large constructive value. The bricklayer is an artisan who, taking his blueprints, builds his own wall skillfully. He has little idea of the reason for building this wall of a certain size and shape. The architect sees the inter-relation and use of every part of the structure on which he works. The architect has the professional viewpoint. Most teachers, however, are *artisans* only; they have not the vision to enable them to legislate wisely for their group as a whole.

THIRD, teachers should elect a *Representative Assembly or Council* which may be consulted by the Board of Education, and the Superintendent of Schools. One plan is to have the voluntary organizations nominate the candidates and then to refer these nominations directly to the schools for an election at large. Another plan is to have the teachers elect one representative for every

hundred, two hundred, or three hundred teachers, then to have these representatives meet and elect the general officers and the smaller executive committee or council "with power."

But one reason for the general unwillingness to grant real power to such a council has been the experience that teachers are inclined to elect to such a council the ultra radicals, persons with a hobby or with a grievance. Furthermore, there appears to be among the more refined women teachers especially, a genuine shrinking from the publicity of a candidacy for election to a teachers' council. This may deprive such a council of some of the best material in the teaching force.

And yet, when we consider all the propositions, we find that no provision has as yet been made, or even suggested, for entrusting definite legislative or executive power to any teachers' council. Such a council may be consulted, but need not even be considered. It is without legal power to compel any one in genuine authority to seriously consider any of its proposals. No superintendent as yet seems to have had the courage, or the temerity, to even propose a genuine experiment in teacher participation in school administration.

Nevertheless, at the National Citizens Conference on Education held in May 1920, at Washington, the matter of teacher participation was considered to be of sufficient importance to warrant passing the following resolutions:

"The attitude of the board of education and of its chief executive officers toward the teaching staff should be such that, while preserving inviolate their authority to make final decisions, it nevertheless encourages to the utmost the exercise of both the individual and collective initiative of the teaching staff, for in no other way can systems of schools be prevented from becoming unduly

autocratic and therefore static and ineffective. In few cities are educational authorities drawing heavily enough upon the great reservoir of power stored up in the collective mind of the teaching body. Only through devising opportunity for a freer and fuller expression of opinion and of conviction on the part of its entire staff can this source of vitalizing and energizing power be tapped.

"While the importance of thus securing and utilizing the experience and wisdom of teachers in matters of school procedure is recognized, it must also be recognized that policies once decided upon *by those in final authority* should be loyally supported, for in no other way can that coöperative effort upon which success depends be secured."

We may believe that the insistence upon obedience to final authority as indicated in these resolutions rests upon the conviction earlier stated in our chapter that the mass of teachers, or the combined intelligence of the group, cannot be trusted to decide wisely, nor to act justly, in matters of serious moment.

It may be possible that a large group of teachers can be momentarily stampeded by an appealing orator (we have known political conventions of hard-headed politicians to have been similarly affected) but the more one works in serious gatherings of professional teachers, the more one will become convinced that by and large, a group of experienced teachers will make no more mistakes of judgment than will the average superintendent in the same length of time.

Particularly because the superintendent has to pass most frequently upon the cases of teachers who have a grievance and who seek to modify his decision on their case by political influence, the superintendent is chiefly

busied with the affairs of teachers whose influence on the school system might be distinctly harmful. Consequently his point of view can scarcely escape the bias of his experience. The sane, hard-working, devoted teacher has little occasion to visit the superintendent. She is involved in no difficulties needing the superintendent's intervention and in his unconscious survey of the possibilities of teacher participation the dependable teacher is often lost sight of because she is intent upon doing her own work and minding her own business.

Teacher participation in school administration if it is to come wisely, must come from experiments, not in a school system at large, but in individual schools here and there where the principal is willing to assume the responsibility that such an experiment entails.

If the experiment fails it may be abandoned, but if harm is done to the school or to the system before its abandonment, or even in the process of its evolution, then the principal alone, under our present educational system, can be called to account and made to pay the penalty.

There is not then great wonder that the democratization of our schools comes slowly. The principal who tries it has his very position at stake if he fails, while if he succeeds he has but the moral or intellectual satisfaction of having done something worth while — which gets him no reward on earth at least.

The man who will try to secure genuine teacher participation in school government must be profoundly convinced that the experiment is so much worth while that even his livelihood must be risked if necessary to accomplish the desired results. In the final analysis, he must be prepared for martyrdom if that be necessary — at least so he may see it in imagination.

It is this fear of what may happen, or what might happen, that keeps many a principal from attempting to put in practice the procedure which he may be intellectually and morally convinced is the proper course. It is this terror of the unknown as a child afraid of the dark, that has kept many a principal from inviting his teachers to share with him the burdens and the responsibilities of managing the school. Together with this terror of the unknown is the principal's unquestioned knowledge that those of his force who call most loudly for participation in the management of the school are frequently those who, in his judgment, would be least able to be trusted with a voice or a vote in school management.

Finally, the safe and sane teachers, who are happy and successful in their work, feel but rarely any desire to participate in school management. If the proposition of teacher participation were, without discussion, put to a vote in most *well managed and successful* public schools, it would surely be defeated in the great majority of cases, if for no other reason than that the teachers trust their principal and have already problems of their own demanding their full attention.

So it is that while we are training future citizens in our modern schools, the institutions in which this training is given are, in their system of beneficent despotism, over a century behind the America of today.

In a large, prosperous and respected private institution of learning in one of our great cities, the president of the institution after considerable study and with some misgivings, decided that he would no longer conduct his faculty meetings after the old plan. This had consisted in his assembling the professors at a formally announced gathering at which he announced certain rules and regu-

lations which the faculty was to accept and to carry out without discussion.

This leader decided if Czardom were to end in political government, that it was high time for it to disappear from educational government as well. Consequently, in his monthly meetings, he no longer lectured to the faculty, laying down the laws they were to follow, but instead took to them for discussion and advice all the larger problems of good management that were causing him concern. These questions he hoped would be freely and frankly debated and the combined intelligence of the group would finally be put in force, by their own voluntary adoption.

At first there was, as might be expected, considerable diffidence shown on the part of many of the instructors toward expressing themselves freely, fearing lest they appear unduly officious, or even antagonistic. This feeling, however, wore away in time, to be replaced by a feeling of opposition to the new plan which arose from quite another reason. The voice of the majority, expressed by their spokesman, one of the older men, was to this effect: "We are ready and willing to carry out your policies. All we want to know is what you want done. We do not wish to be bothered with discussing the whys and wherefores of administrative problems. We have our own problems in our various departments — why add your problems to ours? We have enough to do with our own. Tell us what to do and we will do it gladly, but do not ask us to consider any more unsettled questions affecting the institution as a whole."

The second illustration comes from a public school in New York City where the principal, a well-educated and efficient leader, attempted to adopt a similar democratic plan for the teachers of his school. Instead of as

before issuing unmistakable orders, though always carefully worded as requests, he brought before his teachers' conferences proposed regulations concerning the teachers themselves as well as those concerning chiefly the pupils. Though there was no great enthusiasm over the change, there was, on the other hand, no active opposition to it. The various matters of school concern were moved, seconded and either defeated or passed by the teachers at their stated meetings. If there was any change in spirit among the teachers themselves, it was in a little lessening of their accustomed deference to the man in charge. In general, the school went along as before—no worthy regulations were defeated and practically all that were passed, passed by unanimous vote.

However, the enthusiasm that this man expected from his teachers over this change in management—and he really gave the teachers the full and free right to pass or defeat all propositions concerning themselves—was never noticeable. No explanation was forthcoming until word reached him through an intimate friend to whom innocently one of his teachers had said: "Do you know that Mr. X. is getting so lazy this year that he makes his teachers do for him all the work that he is paid to do. He never bothers to make any rules for us or for our pupils, but makes us do all that work for him at our teachers' meetings. I think he is shirking his responsibility and that the superintendent should be told about it. We have work enough to do without being compelled to do his work besides."

Stories to the opposite effect may exist, but these two experiments, both known to be matters of unquestioned fact, show that if we are able to have any real form of self-government for teachers, we cannot hope, as a rule,

for any great degree of enthusiasm over the change. Indeed one might go so far as to say that, on the whole, it is only the largely inefficient and unsuccessful teacher that imagines the iron heel of the principal pressed down upon her neck and so craves for power to remove it by taking from him, as she hopes, some of his professional authority. If no other good is obtained by teacher participation than the mere squelching of the inefficient or lazy teacher by her fellow workers, a great good is secured. As we all know, the most conspicuous source of school disloyalty is the teacher who is failing in her work. This unhappy and ill-adjusted person is most anxious to remove all suspicion from herself by emphasizing the shortcomings of her supervisor under whose alleged mismanagement she is unable to accomplish the results that her natural ability would, if unhampered, undoubtedly secure. When the regulations checking her shortcomings and exposing her incompetency are passed by an almost unanimous vote of her fellow teachers such a self-satisfied individual is forced to turn her criticisms self-ward. Even though the tendency for most of us in teaching and supervising is to temper the wind for the shorn lamb, here is little intellectual sympathy in any teaching group for the shirk or the slacker.

On the whole, one may say that the efficient principal need never fear that the good judgment of a majority of his teachers will be inferior to his own upon matters of school management. Indeed, one might go so far as to say that no principal, however wonderful in administration, will fail to find genuine help from the discussion and advice of his teaching group as a whole, provided only that this group willingly accepts and enthusiastically enters into the work and study of coöperative school management.

If any principal should find a school really incapable of self-management, he would find at the same time a school incapable of satisfactory results under any type of administration. Such schools may possibly exist, though few if any of us have ever seen one. For the most part, any conspicuous failure in self-government would lead us to agree with General Grant, who is reputed to have originated the epigram "There are no poor regiments — only poor colonels."

However, the compelling arguments for a coöperative, self-governing school come neither from the teachers nor the principal. The teachers who seek self-government most vociferously usually do so in the hope of being freed from some wholly necessary and really undebatable regulations. The principal who advocates most vigorously self-government may be accused of trying to get more work out of his already over-worked teachers.

The only real arguments for a self-regulated school come from the American people as a whole, whose children give the schools existence. If we as parents wish our children to be educated as self-respecting, self-governing men and women, we have a right to demand that they be taught in institutions where are practiced the customs we hope they later will acquire. We may entrust instruction in the rudiments of learning to slaves, but we cannot hope for character building and intellectual guidance for adolescents from men and women who do not and cannot govern themselves.

At once some one will object to the possible opening of our higher schools through self-government to the secretly salaried agitator who endeavors to alienate our children from their natural allegiance to the land of their birth or of their parents' adoption. It may be claimed that this fomentor of civil strife, if not of treason and

rebellion, will find an opportunity to spread his nefarious doctrines as a teacher in our schools unless repressed and removed by the autocratic hand of superior authority.

Now there may be public schools where such treason finds support among a majority of the teachers. Yet no one of us has ever known of such a school in actuality. Indeed if such a school were to exist, it would be hopeless to think of repressing it by any exercise of authority save that of the Federal Secret Service.

Quicker and surer than the action of any principal or superintendent would be the action of the self-governing school faculty. But once place upon the teachers of any school the responsibility of keeping their own ranks free from suspicion by bringing to trial those of their members suspected of disloyalty to flag and country and we may be sure that there will be no treasonable doctrines promulgated in the instruction given at that school. We know beyond the necessity of further proof that the great bulk (probably all but one in a thousand) of our city and country public school teachers are true and loyal Americans. One does not find a higher percentage than this in most boards of education, whether appointed or elected.

However, our early steps in school self-government do not consider as yet any proposals to render teachers' tenure dependent upon the suffrage of their peers; those who oppose the extension of self-government for teachers on the grounds of possible disloyalty provide only an argument for its complete adoption. For our purposes, the chief matters to be considered are those purely local regulations left by common consent heretofore to the fiat of the principal. Such matters may seem of little educational moment, but they concern mightily the spirit in which the school is conducted.

The seemingly trivial question of the assignment of

teachers to monitorial service outside their rooms, the more serious regulations of the fire drill, the time for mid-term tests or final examinations, the requirements for promotion, the rules governing the conduct of teachers during school hours or of the pupils when out of their class-room but inside the school grounds, all these have been from time immemorial promulgated as "orders from the office," yet they can become still more seriously observed if promulgated by a faculty that feels the seriousness of its responsibility. The crux of the whole matter lies in the genuine acceptance by the teaching body of voluntary serious responsibility as an accompaniment of self-determination.

This responsibility *for* the children and *to* the community must be felt by each teacher in the group. To some, this responsibility will come as a pleasure, to others as a matter of indifference and to still others as an added burden. It is always possible, however, for a majority to secure pleasure from the exercise of added authority, even though that mean added burdens. It is not what we do, but what we do unwillingly, that tires us. Nothing that we do willingly is disagreeable. So it rests upon the principal of the school to convert his teachers as gradually as may be necessary to the necessity of self-government, and to do this he must act (and be accepted as one acting) not in his own or his teachers' interests, but wholly in the interests of the community and the Nation. As a good American first, and second, as a good leader, he must build up an interest where one is lacking. This he may best do by moving slowly, by studying each step carefully in advance and by making sure that a reasonable degree of added pleasure is secured for his teachers in each forward step.

The first step is not therefore autocratically placing

authority in administrative matters in the hands of the teachers of any school, but rather, laying before the teachers in conference, the whole self-governing proposition. Both of the fiascos in teacher participation previously related show, after all, a lack of democracy that neither of the supervisors concerned seemed to appreciate. In both instances, self-government was thrust upon the teachers without their previous knowledge or consent. There was no question as to whether these teachers wanted self-government, were in need of it, or were willing to accept and share the responsibilities that their new freedom necessitated.

The first true step then consists in discussing with the faculty the merits and defects of a self-governing school. As a part of this discussion may come the division of matters of school administration into those upon which the teachers really desire to have a voice and a vote and those upon which the teachers prefer only the autocratic ruling of the principal.

Indeed at the start the principal, who is, after all, the one most sure to suffer from any defects in the system, may wish to reserve to himself certain rights and privileges which affect his tenure of position. The real difficulty will not, however, be one of curbing the lawless, but of interesting the patient and conscientious.

Far from being the lazy principal that the teacher of our second episode considered him, the man who undertakes to put into operation any plan of coöperative school government assumes a double responsibility and in some lines at least must do double work. It becomes necessary for such a principal not only constantly to find the remedies for situations that demand his attention, but occasionally to convince the teachers that he supervises, that the remedy he suggests or leads some one

else to suggest, is the best one to be found under the circumstances. It was a far easier task for him to write his orders and check up the indifferent and forgetful. Yet to some the work of "checking up" is so distasteful that they will gladly undertake no end of other work if this burden can be lightened and under any working system of self-government that one burden is unquestionably made easier.

On the contrary, the man who delights in giving orders without reasons, who is happier when all jump at the crack of his whip, who gets real pleasure from *compelling* others for their own good always let us assume—such a man will find a self-governing school a constant nightmare; and self-government, if attempted in his school will be almost surely foredoomed to failure.

However, the true motive that should impel all principals to consider seriously the self-governing school is neither to escape from distasteful duties, nor to exact more service from possibly already over-worked teachers, but the one great motive of sending from his school boys and girls better fitted to assume the rights and the obligations of American citizens because of the atmosphere in which they are trained.

The mere mechanics of school self-government may seem of little moment when the great principle itself is being discussed, yet it is in just this particular that many well intentioned movements fail. Sound as it may be in theory, we have too often seen self-government fail through faulty practice. It becomes therefore entirely worth our while to consider the steps that may be advisable—one by one.

The plan that is hereafter described is unquestionably capable of improvement yet it has this value at least: it has been in successful operation for several years.

First of all, the desirability of having an advisory committee elected by the teachers as a whole is discussed in open meeting — the principal first having consulted with some of the more active and energetic teachers on the advisability of such action.

The reasons explained for such action may be, first, the general argument for teacher participation in the government of a public school in a democracy; second, which is more personally appealing, the need for an elected group to which teachers may come with suggestions, inquiries and complaints on matters of school government with less hesitation than to the principal direct.

If this step finds favor by practically unanimous vote, the teachers are divided into several approximately equal groups by subjects, or by grades, and asked to elect from each group one representative to the principal's advisory committee. Depending upon the school — the degree of interest of the teachers and the actual usefulness of the principal's council — self-government may rest for a while at this stage before proceeding further.

The main difficulty for one who has for years managed his school without let or hindrance is to actually invite this elected group into regular and serious conferences. Equally the difficulty for those who have for years found their work as pleasant and interesting as the principal could make it, is to regard their new positions as more serious than the perfunctory approving of the principal's evident desires.

Until these difficulties are overcome, it is useless to proceed further, but if the principal has persuaded his council of the necessity of taking their elected offices seriously, and has led them to see from the standpoint of the citizen the value of training in citizenship and

self-government for themselves as a step in making their pupils ultimately better citizens, then another forward step, at least, is in part secured.

In the meantime, the general monthly conferences are conducted about as before—with this main difference—that the council is consulted in advance concerning the topics to be taken up in the conferences and that the council more and more assumes the responsibility for seeing that the program is suited to the needs of the school. Equally, too, the council, as far as it is able, takes especial interest in seeing that the instructions given, or requests made, in the general meeting are followed in spirit as well as in letter by the teachers themselves. Not by by-law or school-board requirement, but of their own free will the teachers have given certain of their number superior rights and powers. As a proof of their own fitness to thus participate in self-government the teachers not elected to the council must learn to regard those so elected as superior in position and authority. They must learn, in other words, to respect and to defer to their own representatives, as such.

Gradually, as the council learns to be of real value to itself and to the school, the scope and power of the council is extended, though it may be years in some schools before this next step is found advisable.

In the next stage of self-government this elected group of five or six still acts as the principal's advisory council; they meet subject to his call, or, when they think advisable, at the call of their own elected chairman. However, no matters are ever brought before the teachers as a whole until they have received the sanction of a majority of this smaller group. The teachers so elected serve for one year, or until their successors are installed.

The duties of this group now are to pass, not only upon matters of common acceptance too trivial to warrant calling together the group as a whole, but also upon matters too serious to be brought up for general discussion until they have been thrashed out in advance. The meetings of this group are held, whenever possible, during school hours as a means of decreasing the difficulty of cancelled engagements sometimes too frequently overlooked. Membership in this group is an honor to be everywhere recognized; officially this group becomes one of associate principals, though without individual authority as such.

This board of associate principals, or principal's council, actually prepares, with the assistance of the principal, the program for each general teachers' meeting and shares the responsibility for the program's successful completion. If there are questions which the principal has carefully considered, he need not fear to entrust them to the good judgment of this advisory group, explaining, where not self-evident, his every reason for the reception he hopes for by the larger body.

More and more the larger group of teachers is led to take some active participation in the daily effort to improve the work of the school. Heretofore they may have had the plan of procedure handed to them — first by the principal, then by the principal and his council — now they are asked to give more attention to working out for themselves the plans they will be expected to follow.

By means of committees, carefully selected by the principal and his council, various duties are assigned to groups of from one to five teachers. A stated time is announced for the reports of these committees and they are held strictly to account. Where they need help —

books to be consulted, persons to be interviewed—dates for personal conferences are supplied in advance. The reports when ready are made to the general meeting and approved, adopted, or rejected, by the teachers as a whole.

Some of the topics that are assigned to such committees are: under *administration*—assignment of teachers to yard duty, provision for the noon hour, dates and plan for monthly and final tests, directions for the preparation of report cards and preparation of the commencement program. Under the more strictly *pedagogical* part of the work will come assignments on uniform grade plans, uniform monthly tests, project method plans for various grades and subjects, suggested devices for rapid oral reviews, the better use of the study period, making the assembly program help the class work, a plan for the exchange of help in the class room between any two subjects such as science and English. This list of topics is but an indication of some of the lines that may be followed with profit.

When the committee reports have reached a stage worthy of highest commendation, when the teachers as a whole have become interested through self-activity and self-participation in the larger work of the school, it is but a simple step to as complete a form of self-government as the legal restrictions placed upon the officers of a school will allow.

Yet many principals may hesitate at this last step and many superintendents will advise against it. Indeed it may be questioned as to whether any principal has the legal right to apparently abdicate his position, although he may be within his legal rights if he merely assumes and promulgates as his own the decisions of the group, though even this might be a bitter pill for some to swallow.

Indeed we may as well admit that our teachers have never been trained in the normal schools or in the field to spend much time upon the **WHY** of what they are asked to do. We have not asked them to be professionally minded, let alone *requiring* them to be so equipped.

However true may be the claims of the critics that those in authority use that authority to crush and repress the creative powers and the initiative of those they supervise, our two earlier described verifiable episodes of attempted democracy in education will be more truthful pictures of the real school situation.

And yet the tendency is toward a change. In discussing this very tendency one* of our most prominent American superintendents says (the italics are mine):

"My ideal school principal is one who runs an open door office and who, by sympathetic supervision, invites and encourages teachers to voice their best judgment with reference to the conduct of the school which the state and the municipality have entrusted to their care. Whether or not such coöperation is secured through one device or another, such as is represented by a school council, grade conferences, or general conferences, is immaterial. Lest I be misunderstood, however, permit me to state that I am a very firm believer in definite responsibilities and *centralized authority*. The principal and not the individual teacher is the responsible executive in charge of the school. A *laissez-faire* policy that means headless, spineless, decentralized supervision may temporarily satisfy radical minds, but is certain to lead to disaster."

With this statement we are bound to be in full agreement, even though we may have failed, before reading the last sentence quoted above, to see that some schools might be forced to become self-governing solely through the principal's neglect of his required duties.

However, the same superintendent goes further in his discussion to say (the italics are still mine):

* Dr. Wm. L. Ettinger, New York City.

"To the extent that teachers have a real voice in the administration of the school, so that despite rigid conditions imposed by equipment, size of classes, license requirements, and other factors not easily controlled, the school, nevertheless, represents the working ideal of the majority as to what is best under existing conditions, the school is a model school."

This is indeed a remarkably advanced step. As yet no other superintendent has had the courage to go so far. For there is only one kind of "a real voice" and that is the voice that can back up its *words* with *deeds*. In so far as any teacher is allowed "*a real voice in the administration of the school*" that teacher is a real part and parcel of the government itself.

Finally "*the working ideal of the majority*" can, in the last analysis, only be determined by an actual show of hands. So in the model school of this superintendent, teachers are to have both a voice and a vote in order to determine what is best under existing conditions for their school to do or to abstain from doing. Surely the advocate of teacher participation could ask no more.

With this endorsement let us consider the final step.

In its completeness the self-governing school conducts its monthly teachers' meetings much in the spirit of the town meetings of early New England. The regular formal procedure of any civic or social body is followed.

With the president (principal) in the chair, there is the roll call if necessary — or merely the noting of absentees — then the minutes of the previous meeting are read and approved. Under the head of correspondence, are read letters from the superintendent or from parents that need the attention of all the school. Next come the reports of committees and officers which may take up the greater part of the usual program.

If the principal has a report to make he will make it

as any member would — from the floor of the house, while the chairman of the council temporarily presides.

Similarly, if under the heads of Unfinished Business or New Business the principal wishes to make a motion, he will do just as any presiding officer must do — resign his chair while he is speaking. More frequently the principal may find it wise to suggest to some members of the council, or through them to some members of the teaching staff, the making and seconding of questions for general discussion. The wise leader will also place upon the shoulders of his council the responsibility for the adoption of such motions as have previously gained their acceptance at a council meeting, but which may meet opposition of the open floor.

So far as the strictly pedagogical part of any program is concerned, the best results have been obtained by having adopted a single line of work to be followed for a semester. Early in the school year a suggested list of topics for discussion and study may be distributed to the council and upon motion, the one that seems to be most productive of interest and value for that semester may be adopted at a general meeting by a majority vote.

No matter how carefully the principal may have prepared his notes, no matter how eager he may be to express his views, the thoughtful principal will, as chairman, assign the preparation and the presentation of the various studies to be made to the teachers of his staff. If results in school work and spirit, rather than self-aggrandizement and self-glorification, are to be aimed at, the principal will submerge his personal views, except as he may employ them in assisting the committees, of one or more, to prepare the reports which they are to present to the general meeting.

So this at last is our self-governing school in so far

as the laws of the city and state permit it to be self-determining. No very great change, let us be frank, will be outwardly manifested over any school controlled by a beneficent despot.

The same influence of the meddling politician who has a favorite to place on the rolls will be experienced. Those in higher authority still will step in, now and then, to over-rule the expressed will of the majority and at this time the self-governing school suffers more than it would have done had only the principal been over-ruled, because now the teachers also feel that other "iron heel" that only the principal knew before.

Yet even from these rebuffs, the self-governing school rises like "truth crushed to earth" and soon resumes the even tenor of its way.

And now at the end of our long discussion, some one may ask "Is it all really worth while?" The answer from those who have faithfully tried it is unqualifiedly, "Yes, it is unquestionably worth all it costs. It is worth it in the increased happiness of the teachers, in the increased quantity and quality of the work accomplished for the pupils, it is worth it more than all in the increased love and devotion the pupils feel toward their teachers and their school."

Only to that extent to which our pupils will themselves be benefited, by being better trained for democracy in a school that is itself conducted on democratic lines, can we justify any departure from the older system which, while it had its faults, still had its undoubted merits too.

It is for the sake of pupils and, in the last analysis, for the pupils alone, that we are warranted in adopting any form of teacher participation in school administration.

QUESTIONS

1. What is the value of discussing teacher participation in the junior high school management?
2. Why may this best be considered by junior high school teachers?
3. What are the most serious charges against present school management?
4. From what two kinds of teachers do these charges chiefly come?
5. What is the effect of teacher participation on malcontents?
6. Why may teacher participation almost double the principal's work? The teachers' work?
7. What can justify assuming this double burden?
8. What gradual plan for introducing teacher participation can I outline?
9. How many years may it (will it) take to work out such a plan?
10. What benefits may we expect the pupils will receive from such an administrative change?

APPENDIX

In the courses of study that are here given the three years work is divided into four divisions to agree with the plan followed at Speyer School of allowing the brightest pupils to attempt to cover three years work in two years. The course as printed is, therefore, a Rapid Advancement Course.

The brightest pupils would cover the work of the "A" Term in one half of the school year or in twenty weeks of actual school work and the entire (A, B, C, D) work in two years.

Average pupils would cover the work of the "A" Term in approximately thirty weeks and the entire (A, B, C, D) work in three years.

Finally the very slowest moving classes might only cover the work of the "A" Term in an entire school year of forty weeks, and the entire (A, B, C, D) work in four years.

The following courses of study are from the general or pre-academic plans only.

MATHEMATICS

Explanation — Though the various subjects arithmetic, algebra and geometry are frequently pursued side by side on different days of the same week, it is not practical to show this in the term plans. The plans following therefore show the work of each month subdivided and grouped by subjects, though in actual instruction the two or more subjects will be taught to the same class in the same week and occasionally in the same class period.

Text: Junior High School Mathematics. Wentworth, Smith and Brown.

"A" TERM

ARITHMETIC

First Month	Arithmetic of the Home: Business forms: cash and household accounts. Percentage: three cases. Application to household economics. Reading gas and electric meters.
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Second Month	Arithmetic of the Store: Integers: addition, subtraction, multiplication — checking, short cuts in multiplication. Fractions: multiplication of fractions by integer, multiplication of mixed number by integer and by mixed number. Percentage: application to commercial discount. Bills, receipts.
Third Month	Business forms. Invoices. Problems.
	Arithmetic of Industry: Fractions: addition, subtraction, division. Business forms: pay roll. Problems.
	Arithmetic of the Bank: Savings. The general types of banks. Simple interest.
Fourth Month	Principle of compound interest. Bank discount.
	Business forms. Checks, promissory notes. Problems.
Fifth Month	Review.

GEOMETRY

First Month	Geometry of form: Geometric figures: angles, triangles, quadrilaterals. Construction: triangles; isosceles triangles; equilateral triangles; perpendiculars; bisecting line, angle of angle equal to a given angle.
Second Month	Parallel lines. Dividing a line. Construction of geometric patterns. Drawing to scale
	Proportions. Similarity of shape. Angles in similar figures. Similar figures in photographs.
Third Month	Pantograph. Symmetry. Plane figures formed by curves. Solids bounded by curved surfaces. Problems without figures.
	Geometry of size: Length. Practical measurements.

Fourth Month Estimate of areas: Area of rectangle, parallelogram, triangle, trapezoid, polygon.

Fifth Month Review.

"B" TERM
GEOMETRY

First Month Areas of polygons: rectangle, triangle, parallelogram, trapezoid.

Ratio and proportion. Proportional numbers and lines.

Similar figures: heights of inaccessible objects.

Circles: radius, diameter, circumference, area.

Volumes: square prism, cylinder.

Curved surface of cylinder.

Plastering and painting walls. Board measure.

Metric measures: length, weight, capacity.

Second Month Fixing positions of points. Positions on maps.

Points equidistant from two points — distance of a point from a line.

Position fixed by two lines.

Points equidistant from two lines.

Use of angles in fixing points. Problems without figures.

Square root: factoring method. General method.
Applications of square root

ARITHMETIC

Third Month Ordering goods. Invoices and bills. Personal accounts.

Profit and loss: reckoning profit on the cost.

Commercial discount. Several discounts.

Short methods in multiplication.

Fourth Month Foreign money: shilling, franc, lira, mark, ruble.

Metric system reviewed. Problems without numbers.

Passenger rates: express rates, parcel post.

Review. Problems without numbers.

Fifth Month Buying tools: cotton industry, wood work, machine shop, baking industry.

Interest; promissory note (interest on).
Bank discount; proceeds, etc.

ALGEBRA

First Month	The formula. Symbols. Simplifying algebraic expressions. Evaluation of formulas.
Second Month	Statements and symbols. Need of formulas.
Third Month	Formulas in games, and in geometry.
Fourth Month	Formulas of areas of polygons, and of volumes. Formulas for circle, cylinder, cone, sphere.
First Month	Formulas used in shops, in the home, in business.
Second Month	Equation: the unknown quantity; problems.
Third Month	Equation: solution of, by addition, subtraction, multiplication or division.
Fourth Month	Graphs: value of graphs; bar pictograms, circular pictograms. Cartograms.
	Functional relations. Graph of tables. Interest and wage graphs.
	Graphs of formulas. Review.

"C" TERM

ALGEBRA

First Month	Multiplication: Negative multiplication. Special products.
Second Month	Division: Negative division. Express statements in form of equations. Problems of simple machines. Business. Symbols. Formulas. Rules. Order of operation: 1. Powers. Roots. 2. Multiplication. Division. 3. Addition. Subtraction.
Third Month	Equations: Solving at sight. Axioms: Uses. Problems. Formulas used in Industries. Graph.
	Addition: Subtraction involving negative numbers. Multiplication: Division involving negative numbers. Terms used.
	Addition of polynomials: equations. Subtraction of polynomials: removal of parentheses, several symbols.

Fourth Month	Equations involving subtractions. Multiplication of polynomials. Square of sum or difference of two numbers. Square roots.
Fifth Month	Products. Factoring the difference of two squares. Special case. Product of two binomials. Factoring a quadratic trinomial. Cube of a binomial. Graphs.

GEOMETRY

First Month	Terms explained: Lines. Point. Properties of straight line. Solid. Plane. Angles. Bisecting a line. Constructing an angle equal to a given angle. Bisecting an angle.
Second Month	Constructing perpendiculars. Construction of triangles. Judging by appearances. Axioms. Postulates.
Third Month	Congruent angles. Inferences. Theorem: Two sides and included angle. Inferences as to isosceles triangles.
Fourth Month	Theorem. In an isosceles triangle the angles opposite the equal sides are equal. Theorem. Two angles and included side. Congruence of triangles. Inferences. Theorem. Three sides (triangles). Theorem. Congruence of right triangles. Review of congruence.

“D” TERM

ALGEBRA

First Month	Multiplication of binomials. Factoring: cubes and trinomials. Division by monomial, binomial, polynomial. Division, fractions in quotient.
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	Fractions: reduction, signs, addition, subtraction, multiplication, division.
Second Month	Equations: simple and with fractions.
	Problems in simple equations.
	Simultaneous equations.
	Elimination by addition or subtraction.
	Elimination by substitution.
	Problems: simultaneous equations.
Third Month	Quadratic equations: Pure and affected, solved by factoring and by completing square.
	Formulas and general review.

TRIGONOMETRY (Mere introduction)

Fourth Month	Functions of angles: Shadow reckoning. Tangent of an angle. Finding of tangents. Table of tangents. Measuring angles. Practical use of the tangent. Tangents. Sine of an angle. Table of sines. Sines. Function of an angle. Cosine of an angle. Cosines. Cotangent of an angle. Use: cotangent. Trigonometric tables. Complementary angles. Functions. Table of functions. Review.
Fifth Month	Review of algebra.

GEOMETRY

First Month	List of postulates and definitions.
	Statements memorized and explained.
	Theorems:
	Vertical angles.
	Congruent triangles and inferences.
	Two sides and included angle.
	Isosceles triangle.
	Two angles and included sides.
	Three sides.
Second Month	Theorems:
	Congruence of right angles.
	Parallels cut by transversal.
	Alternate angles equal.
Third Month	Theorems:
	Equal parts of parallelogram.

Opposite sides equal.
Two sides equal and parallel.
Transversal and parallels.
Angles of triangles.

Fourth Month	Theorems: Angles of polygon. Sum of exterior angles. Rectangles. Square of sum, square of difference, rectangle of sum and difference. Area of parallelogram. Area of triangles.
Fifth Month	Theorems: Area of trapezoid. Pythagorean theorem. Problems: bisect line, equal angles, bisect angles, perpendicular from point outside, or on the line. Theorems: Points equidistant from a line. Points equidistant from points. Method of finding locus.

LITERATURE PLAN

FOR INTENSIVE READING

FOR CURSORY READING

“A” TERM

1. Study of a newspaper
2. Use of a dictionary
Select one.

1. Treasure Island
2. Sohrab and Rustum
3. Ancient Mariner

1. Lady of the Lake
2. Christmas Carol

“B” TERM

1. Lewis Literature — Short selections
2. Ivanhoe
3. Sketch Book *

1. Lays of Ancient Rome
2. Cooper — Novels
3. Tom Brown's Schooldays
4. Franklin's Autobiography
5. Dickens' David Copperfield

“C” TERM

1. Bullfinch — Mythology — Stories of Gods — Goddesses — Heroes of Greece
2. Odyssey, Selections from
3. Iliad, Selections from

1. Making of an American
2. The Virginian
3. Tennyson — Idylls
4. Poe — Short Stories
5. Peabody — Piper

“D” TERM

1. Midsummer Night's Dream
2. As You Like It
3. Merchant of Venice *

1. Julius Caesar
2. Lorna Doone
3. Lamb — Essays — shorter stories only
4. Silas Marner
5. House of Seven Gables

* Third term High School work, but desirable for brightest junior high school pupils.

WRITTEN ENGLISH

PART I. CONTENT. *Suggested topics for letters*

“A” TERM

1. Spirit of Speyer.
2. Art Excursions.
3. Speyer Activities.
4. Looking forward to High School.

“B” TERM

1. Science Excursions:
What we saw that was worth remembering.
2. Vocational Guidance:
Telling advantages of certain trades or professions.
Asking advice as to some trade or profession.
3. Business Letters:
Orders to stores, complaints, recognition of courtesies.
4. Social Forms:
Invitations — formal and informal; regrets, etc.
5. Current Topics.

“C” TERM

1. Recommending that a certain book be read.
2. Literature and History, e.g., Shakespeare's England.
3. Science Experiments.
4. Vocational Guidance; “How I Could Earn My Living.”
5. Business Letters; order, complaint, application, etc.
6. Current Topics.
7. Civic Responsibility; Letters to City Departments.

“D” TERM

1. Business Letters.	5. Literature.
2. Current News.	6. Stage.
3. Speyer Happenings.	7. Athletics.
4. Civic Responsibility.	8. Science, Art, French, etc.

PART II. FORMAL SIDE

On the formal side of the written English a spiral plan of work is being tried out which differs each semester only in degree and not in kind.

For all pupils the following sequence is maintained:

First Month *Reader's interest to be obtained through*

Good Beginning:

1. Original, attractive, alive, sincere, natural, jolly.
2. Variety of expression:
 - (a) Break "and" habit.
 - (b) Expand simple sentences.

Arrangement, heading, envelope.

Punctuation.

Period:

1. No end punctuation in heading.
2. Used at end of complete thought.
3. Used in abbreviations.

Second Month *Reader's Interest to be obtained through*

Knowledge:

1. Exact.
2. Enough.
3. Well arranged facts.
 - (a) Topic sentence.
 - (b) Outline.

Punctuation.

Comma. (See footnote for detail.)*

Third Month *Reader's Interest to be obtained through*

Variety:

* The four (A, B, C, D) successive steps in difficulty are illustrated, in the case of the *comma*, on page 389.

1. Sentence Structure.

(a) Simple, compound, complex, inverted, balanced, loose, periodic.

(b) Transition words.

2. Careful use of period, comma.

Punctuation:

Question mark to give variety.

Capital letters (P. 454, Miller and Palmer).

Fourth Month *Reader's Interest to be obtained through Expression:*

1. Clear expression.
2. Choice of words, verb sequence.
3. Good salesmanship — using devices of best type of advertising.

Punctuation:

Apostrophe.

Capital letters (continued).

COMMA

“A” TERM

Heading, salutation, closing, envelope.

1. Direct address.
2. Before “but”.
3. Words in apposition.
4. Words in series.

“B” TERM

1. To set off adverbial clause out of its natural order.
2. To set off a phrase containing a verbal form used out of its natural order.
3. Phrases or clauses in series.

“C” TERM

1. Nominative absolute construction.
2. Parenthetical words, phrases or clauses.
3. Descriptive clause.

“D” TERM

1. To set off introductory word or phrase.
2. To indicate omission of a word.
3. To separate contrasted or balanced parts of sentence.
4. To avoid ambiguity.

FORMAL GRAMMAR PLAN

“A” TERM

Sentence

Subject and predicate

Compound subject and predicate

Kinds of sentence

Form	Simple.
	Complex.
	Compound.

Use	Declarative.
	Interrogative. Exclamatory.
	Imperative.

Compound sentences

Parts of speech recognized

Classification of nouns

Proper.
Common. Collective

Inflection of nouns

“B” TERM

Pronouns:

Classes.

Inflections.

Adjective and Adverb:

Classes.

Inflections.

Complex

Adjective clauses.
Adverbial clauses.

Omit noun clauses until “D” term.

Conjunctions: coordinate, subordinate.

Review of previous work.

“C” TERM

Verbs:

Regular. Irregular.

Transitive. Intransitive. Copulative.

Active and Passive.

Modes: Indicative, Imperative, Subjunctive.

Tenses (6).

Corrections of errors, agreement of verbs and subjects.

Review of previous work.

"D" TERM

Verbals.

Infinitives and participles.

Noun clauses.

Expanding simple sentences to complex; phrases to clauses; and combining detached statements into simple compound and complex sentences.

Same word used as different parts of speech.

Analyses and syntheses.

**PUPIL'S GUIDE FOR CORRECTION OF ERRORS
OF FORM IN HIS LETTERS****1. Margin.**

1. Left hand $1\frac{1}{2}$ -2 inch.
2. Right hand 1-2 inch.

2. Heading.

1. Open.
2. Box.
3. Three lines.
4. No abbreviations except state.

3. Salutation.

1. Touching margin line.
2. Capitalize first word and all names.
3. Comma.

4. Closing.

1. Capitalize first word.
2. Follow first line by comma.
3. Period after name.

5. Paragraphing.

1. Topic sentence.
2. Indentation.
3. Unity.
4. Coherence.
 - (a) Transitional words.
 - (b) Repetition.

6. *Sentences.*1. *Variety in:*

- (a) Kind.
- (b) Length.
- (c) Order.

2. *Structurally correct.*

- (a) Avoid "and" habit.
- (b) Unified.
- (c) Clear.
- (d) Connectives.
- (e) Modifying elements.

7. *Spelling.*

- 1. The apostrophe.
- 2. Capitalization.
- 3. Contractions.
- 4. Abbreviations.

8. *Punctuation.*

- 1. Full stop at the end of sentence.
- 2. Comma.
 - (a) Direct address.
 - (b) Series words, phrases, and clauses.
 - (c) Before "but."
 - (d) To separate phrases and clauses which begin sentences.

9. *Penmanship.*

- 1. Legible.
- 2. Uniform.
- 3. Neat.
- 4. Large.

10. *Grammar.*

- 1. Subject and predicate.
- 2. Agreement between subject and predicate.
- 3. Tenses.
- 4. Verb forms (irregular).

5. Pronoun and its antecedents.
6. Pronoun and its cases.
7. Comparison of adjectives and adverbs.
8. Correct use of:
 - (a) get — be.
 - (b) shall — will.
 - (c) learn — teach.
 - (d) would — will.
 - (e) could — can.
 - (f) should — shall.

FRENCH “A” TERM

Most of the time in French for the “A” term is devoted to an expansion of the topics under Social Studies “A” term, but which are not reprinted here. See Social Studies.

Vocabulary. Conversation based on:

La Classe
Le Corps
Les Vêtements

Les Nombres
L'heure

*Songs and Games *:*

Frère Jacques
Est-ce —
Il était une bergère

Au clair de la lune
Sur le pont d'Avignon

Phonetics:

All vowel sounds.
Nasals.

Grammar:

Definite and indefinite article.
Gender of nouns.
Agreement of adjectives.
Present tense of *avoir* and *être*.
Present tense of verbs of the first conjugation.
Use of interrogative pronouns.

“B” TERM

Having awakened a keen desire for the study of French through the “Introductory Course” in the *A* term, the *B* term takes up the work in a more intensive manner.

Although part of the daily instruction is to be devoted to

* *Reading:* Mérás, *Le Premier Livre*, Lessons 1, 2, 3, 4.

phonetic drills and conversational exercises, a systematic study of the elements of grammar and simple syntax is begun.

Reading:

Twenty-five to thirty pages from a graded reader (Le Premier Livre, Méras).

Memory:

Le Petit Pierre (Poetry).

La Marseillaise (Song). First stanza.

Remi (Prose). Twenty lines.

Proverbs (12).

Grammar:

Adjectives: agreement, position, formation of feminine and plural of regular adjectives. Irregular adjectives: *bon, blanc, heureux, beau, long, cher.*

Nouns: Gender, formation of regular plural.

Pronouns: Subject

Interrogative *qui* and *que.*

Verbs:

Present indicative of *avoir* and *être*, all forms.

Present indicative, past, past indefinite, future, and imperative of regular verbs of 1st, 2nd and 3rd conjugations.

Present indicative, past indefinite, and imperative of the following irregular verbs: *prendre, comprendre, dire, lire, écrire, aller, mettre.*

Adverbs: Comment, combien, ne-pas.

Miscellaneous:

Cardinal numbers to 100.

Ordinal numbers to 50.

Days of week, months.

Idioms:

Voici, voilà; il y a.

Comment allez-vous?

Comment vous appelez-vous?

Etc., etc.

"C" TERM

Idioms:

Salutations, age, weather, *avoir faim, peur, etc.*

Poetry:

La Marseillaise, En passant par la Lorraine.

Reading:

Le Premier Livre, Méras, about 50 pages, or Conversational French Reader, Bierman & Frank, 20 selections.

Miscellaneous:

Numbers to 1000; proverbs; *il y a, voilà; quel, qu'est-ce qui; ne-jamais*, etc., *en* and present participle, *après* followed by infinitive, partitive noun preceded by adjective, two ways of forming question, months, seasons.

Article: Definite, singular and plural, combined with prepositions *de, à*; partitive. Indefinite, singular and plural.

Adjectives:

Agreement, position, rule of adjectives of color, nationality, comparison, regular and irregular, irregular feminine and plural.

Demonstratives.

Possessives.

Pronouns:

Direct and indirect object.

Demonstrative.

Disjunctive.

Relative, *qui, que*.

Partitive *en*.

Verbs:

Present indicative, imperfect, past indefinite, future, principal parts.

Imperative of regular verbs in *er, re, ir* and of some more common irregular verbs like *prendre, mettre, ouvrir, écrire, faire, comprendre, dire, lire, répondre, aller, avoir, être*.

Agreement of past participle when combined with *être*, with *avoir*.

Reflexive and reciprocal verbs.

Adverbs:

Formation, position with past participle, *plus*, *moins*, *y*, *plusieurs*.

“D” TERM*Idioms* (continued).*Poetry:*

La Cigale et la Fourmi.
Le Renard et le Corbeau.
La Grenouille et le Boeuf.

Reading:

Le Premier Livre, Méras, about 50 pages.
. Petits Contes de France, Méras and Roth, about 50 pages.
Scenes of Familiar Life, Frazer, 7 to 10 selections.

Article:

Indefinite. (Omitted with words indicating profession or nationality.)

Definite:

Used in a general sense.
Used instead of a possessive.

Partitive:

Before an adjective.
After a negative.
After nouns and adverbs of quantity and measure.

Adjectives:

Plural of irregular adjectives.
Superlative degree.
Rules for position and agreement (continued).

Pronouns:

Possessives (continued).
Demonstratives (continued).
Relatives (continued).
Disjunctives as objects of a preposition.
Use of two objects (continued).
En, *on*.

Verbs:

Complete all tenses except subjunctive of verbs previously studied, regular and irregular. Add verbs like *aller*, *venir*, *pouvoir*, *vouloir*.

Formation of tenses.

Synopsis.

GENERAL INTRODUCTORY SCIENCE

“A” TERM

First Month A. How high have men gone in balloons or airplanes?
How did they know how high they had gone?
1. How do you make a mercury barometer?
Experiments to prove the principles involved.
Air exerts pressure, has weight, occupies space and is a real substance.
2. Why is the aneroid barometer in more common use than the mercury barometer?
3. How do the officials at an aero meet know the altitudes attained by the various contestants?
4. Barograph.
How could you use a barometer to help predict the weather?
Second Month B. 1. How could you empty a flooded cellar?
(sewer or excavation)
Lift pump.
2. How would you get water into a tank on the top of a high building?
Force pump.
3. How would you empty an excavation filled with soft mud, or water containing sand and small stones?
Centrifugal pump.

Third Month C. 1. How is a vacuum bottle made?
Exhausting air pump. Commercial uses of a vacuum.
2. How is a bicycle tire inflated?
Bicycle pump.
3. How is a building cleaned by sand blasting?
Air compressor. Commercial uses of compressed air.

Fourth Month

D. How would you empty an aquarium?
Siphon. Commercial siphons.

E. Why do aviators bleed at high altitudes?
Air pressure and the human body. The "bends."

1. What causes "ringing" in the ears?
Structure of the ear. Sound. Eustachian tube.

F. How does a Boy Scout build a fire?
Composition of the air. Properties of oxygen, carbon, nitrogen, hydrogen, and carbon dioxide. Products of burning.

1. How does a match burn?
Kindling point. Oxidation.

2. How would you put out a fire?
Fire extinguishers.

Fifth Month

G. How does New York City get its water supply?
Sources. Purification. Pressure.

1. Do all cities get their water from mountains?
Water supply systems.

2. How do we get the water into the house?
House piping. Hot and cold water supply. Faucets.

3. How is waste matter carried away?
Sewerage systems. Septic tanks.

H. Could you tell when a storm is coming?
Weather Bureau. Weather map. Winds.

1. What causes rain?
Evaporation and condensation.

"B" TERM

(SPRING TERM BIOLOGY)

First Month

Museum of Natural History: Prehistoric animals.
Proj. Were there any animals on earth before man?

Museum of Natural History: Struggle for existence.
Proj. How do animals benefit man by fighting for him?

Museum of Natural History: Habitat Bird Group.
Proj. Group these birds on adaptation to environment.

Museum of Natural History: Birds of the world.
Proj. How do birds help conserve natural resources?
Proj. What adaptation have birds for (a) protection? (b) food getting? (c) life in air?

Second Month Museum of Natural History: Commercial Animal Products.

Proj. How are water mammals valuable to man?
Aquarium: Fish (adaptations, protective coloration).

Proj. What adaptations has a fish for life in water?
Botanical Gardens, Bronx Park Tropical Plants.

Proj. How do plants of tropics differ from ours?
Museum of Systematic Botany: Commercial Plant Products.

Proj. What valuable commercial products do we obtain from plants?

Third Month Museum of Natural History: Useful insects.

Proj. How are insects beneficial (a) to plants, (b) to man?

Museum of Natural History: Harmful insects.

Proj. How are plants injured by insects?

Museum of Natural History: Flies and mosquitoes.

Proj. How are insects harmful as carriers of disease?

Museum of Natural History: Food values.

Proj. What foods should you eat and how much?
Make a menu for (a) breakfast, (b) dinner, (c) supper.

Make a menu for a school luncheon.

Fourth Month Museum of Natural History: Woods and Forestry.

Proj. How is wood made?

Palisades: Soil and Rocks.

Proj. What does soil in woods contain?

Palisades: Trees in relation to environment.

Proj. What evidence of a struggle for existence do you observe among the trees in the woods?

Palisades: Flowers.

Proj. How are flowers benefited by insects?

How do flowers produce seeds?

How do fruits and seeds secure dispersal?

Fifth Month Palisades: Amphibia and reptiles.

Proj. What animals can you find in swamps and ponds?

How are they adapted for protection?

How are they useful to man?

Zoological Gardens, Bronx: Recognition Test.

Proj. How many birds which you studied at the Museum early this term can you identify? How can we justify the spending of city money to care for all these animals?

Aquarium: Fish Conservation.

Proj. How are fish artificially propagated? How is this work valuable?

“C” TERM

First Month A. Why did the U. S. government build the dam at Keokuk?

Conservation of energy. Sources of energy. Kinds of energy. Transformation of energy. Forms of energy.

What would happen to the earth if the sun were to stop giving light and heat?

B. How would you find your direction at night?

North star. Constellations. Sun and stars. Nebulae. Solar system.

1. What causes the phases of the moon?
2. What causes the change of seasons?
3. Why did we have to change our clocks September 20th?

Time. Standard and solar time. International date line.

4. If you were transported to the moon, how high could you jump?

Second Month C. How are our houses lighted?

1. Why have our houses windows? Sun as source of earth's light. Reflection and diffusion of light.

2. How does a prism form the “rainbow”? Refraction. Color in sunlight. Color of bodies.

3. How do we take pictures?

Lenses. Camera. Human eye. Intensity of light.

4. How are our houses lighted when the sun is not shining?

Candles. Kerosene. Gas. Electric light.
Direct and indirect lighting.

D. How is your home heated?

Heating Systems: steam, hot water, hot air, stoves, gas heater. Distribution of heat.
Coal and wood as fuel.

Third Month E. Why does a car, rolling along the tracks, come to rest?

Inertia. Friction. Weight. Work. Horse-power.

F. How can man, weak as he is, move weights greater than can be moved by other stronger animals?

What machines are used in your home?

Lever. Wheel and axle. Pulley. Inclined plane. Wedge. Screw. Pendulum. Complex machines.

G. Why do mariners need the compass?

Magnets and lines of force. Laws of magnetism.

Fourth Month H. What makes an electric bell ring?

Electric magnets. Permanent and temporary magnets. Telephone and telegraph. Wireless telephone and telegraph. Electricity and modern means of communication.
Organs of speech.

I. Why does a ship made of iron float, while a piece of iron sinks in water?

Flotation. Specific gravity. Submarines.

Fifth Month J. How is a locomotive able to pull a long train?

Steam engine. Steam ship. Great land and water routes.

K. How does an automobile move by itself?

Gas engines. Automobiles.

L. How do subway trains move?

Electric motor. Dynamo. Power stations.

M. How may electricity be made commercially, without the use of steam?

Water power. Water wheels. Conservation of the forests.

"D" TERM

(FALL TERM BIOLOGY)

First Month	<ol style="list-style-type: none"> 1. How does a flower produce a seed? Essential organs, pollination. 2. What does the pollen grain do after it reaches the stigma? Microscopic study of pollen grains grown in sugar solution. Fertilization. 3. How does a seed produce a new plant? Purpose of seed in plant's life. Seed dispersal, especially weed seeds. Economic value of seeds. How man secures better plants.
Second Month	<ol style="list-style-type: none"> 4. How is the embryo nourished until able to support itself? Show how growth is affected by air, water, temperature. 5. What food substances are found in seeds — bean, corn. Tests for nutrients — starch, sugar, protein, fats, minerals, water. 6. How is stored food made ready for use in a seedling? How seeds digest starch. 7. How is food used by animals? Show digestion of starch, protein. Digestive system: organs, functions, secretions, enzymes. 8. How do foods get into the blood? Osmosis. Circulatory system: study of blood, source of plasma, function of corpuscles. 9. What effect has exercise on rate of heart beat? Taking one's pulse. Heart: location, size, shape. Function of valves — arteries, veins and capillaries.
Third Month	<ol style="list-style-type: none"> 10. What changes take place in blood as it passes through walls of alimentary canal, muscles, lungs and kidneys?

11. How is heat value of foods measured?

How much food should you eat and of what kinds?

Make a menu suitable for a boy's school lunch.

Make a science poster for a school campaign to secure better lunches for boys at Speyer School.

12. What is value of good drinking water in our daily diet?

How has New York City secured a good water supply?

How do trees affect moisture in soil?

How do root hairs absorb soil water?

Microscopic study of root hairs. Osmosis.

What else besides water do roots take from soil?

How does water pass up through stems?

Fourth Month 13. How is food manufactured in green leaves?

Show that (a) green leaves contain starch, (b) starch is made in the green leaf, (c) air, light, water and chlorophyll are necessary for starch making.

14. Experiments to show that green leaves give off O and H₂O when manufacturing starch.

Microscopic study of green leaf, guard cells, stomata.

15. How do non-green plants secure food?

Saprophytes useful to man — yeast.

Parasites harmful to man.

16. Why do foods spoil?

Bacteria: useful and harmful.

How are plants and animals mutually helpful?

Protozoa: harmful and useful.

SOCIAL SCIENCE

“A” TERM

(*History, Geography*, Civics*)

The history in the A Grade starts with the recent war and carries the pupils back to the early history of Europe. Special emphasis is placed on the part France has played in history.

This work is planned to serve in part as an introduction to a study of the French language.

1. France — our ally in the World War.
Joffre, Foch, Petain, Pershing, Wilson, Lloyd George, Clemenceau, Orlando.
2. Ancient friendship of France for the United States.
Lafayette, Franklin, De Grasse, Rochambeau.
3. Conditions leading up to the French Revolution.
Louis XIV, Louis XV.
4. Government in France during our Revolution.
Louis XVI.
5. The French Revolution.
Robespierre, Danton, Marat.
6. Napoleon.
7. Why was there no revolution in England?
Magna Charta, Petition of Rights, Bill of Rights.
8. Development of Parliamentary system of government.
Great Council, Simon de Montfort's Parliament, Model Parliament, Long Parliament.
9. Earlier forms of government.
Feudalism.
10. France in the Middle Ages. The days of chivalry.
11. The Hundred Years' War.
Joan of Arc.
12. The Crusades.
Godfrey de Bouillon, Barbarossa, Richard Coeur de Lion.

* The geography taken up in this course consists of a study of the territories covered in the historicals survey previously outlined, together with a study of the colonial possessions of the great European powers.

13. Charlemagne. Rise of the Holy Roman Empire.
14. The people of France.
Origin, development, customs, ideals.

“B” TERM

The B Grade takes up ancient history in order better to understand the present. Some of the contributions of Rome, Greece, Babylonia and Egypt to present day civilization are touched upon in a study of the development of civilization in these countries.

1. Evidence today that there was a great period before the time of Charlemagne: (a) Art, (b) Literature — Iliad, Odyssey, (c) Roman Law Books.
2. Rome: advantages of her geographical position that aided her in becoming center of a great empire.
3. Rome: Early Roman society; the Roman family, religion, government. Social classes in early republic — patricians, plebeians. The twelve tables.
4. Rome: Expansion of Rome; Carthage *versus* Rome; Punic Wars; military genius of Rome.
5. Rome: great personalities of Rome in the period preceding the Empire period; (a) Gracchi, (b) Marius, (c) Sulla, (d) Pompey, (e) Crassus, (f) Caesar, (g) Antony, Octavian.
6. Empire period: (a) Augustus, (b) Nero, 64 A.D., (c) Titus, 79 A.D. Excavations at Pompeii, (d) Hadrian, famous Pantheon, walls, baths, aqueducts, theatres and temples. Literature of this period — Aeneid, Horace, Vergil, Livy.
7. Survivals of Roman period: (a) Language — Romance languages, (b) Roman law, (c) Roman idea of free self-governing city never died out of Europe.
8. Greece: the country from which Rome borrowed a large part of her culture. How the mountains of Greece divided it so that city states developed.
9. Greece: myths found in Homer and Hesiod founded on historic facts; excavations at Troy and Mycenae; religion, gods and goddesses.
10. Greece: Sparta and Athens as types of city states; assembly of freemen; training of Spartan boy.
11. Greece: attacks by other nations. Supremacy of Athens.

Age of Pericles. Literary development. Herodotus. Progress in philosophy — Socrates, Plato, Aristotle.

12. Greece under Philip and Alexander the Great. Contributions of Greece: (a) Art, (b) Science, (c) Literature, (d) Philosophy.

13. Phoenicia: carrier of knowledge in ancient times; contributions: alphabet and colonies established.

14. Babylonia: geographical conditions that led to the development of an early civilization. Brief history. Contributions: (a) sundial, (b) water clock, (c) face of the clock.

15. Egypt: how the geography of Egypt has affected its history. Important periods in Egyptian history, (a) pyramid builders, (b) temple period. Contribution: rudimentary calendar.

16. Contributions made to civilization by India and China. Causes for lack of progress.

“C” TERM

Aims: “Knowledge interpreting” rather than “knowledge getting.” A study of the relations of cause and effect. Important influences at work in our history.

The pupil trained to use his knowledge to interpret present day conditions.

The pupil better prepared (1) to obtain authentic information upon public questions; (2) to develop an interest in the social problems of the day; (3) to maintain an open-minded attitude toward controversial subjects; (4) to gain an increasing ability to evaluate correctly qualities of leadership in public servants; (5) to recognize and appreciate his great civic inheritance.

I. Civilization carried to a New Continent; American beginnings in Europe. Economic conditions leading up to the discovery of America. American discoveries and explorations. Colonization of America and colonial life. Growth of the spirit of democracy. The American Revolution. Welding the states into a nation.

II. The growth of our nation, with special emphasis upon: amendments to the Constitution; new political parties; in-

ventions and discoveries as affecting industry and commerce; the tariff as affecting industry.

III. Transportation and travel. Increase of population by immigration; the growth of cities; unification of the North and the South; labor unions; conservation; civil service reform; public health; public education; equal suffrage.

IV. The Spanish American war as a phase of expansion. Foreign relations; the Monroe Doctrine applied; island possessions; Hague tribunal; Panama Canal.

Some causes and some effects of the World War.

“D” TERM

(COMMUNITY CIVICS)

Topic: The course in Community Civics is given in the hope of making better citizens of our pupils by arousing in them an interest in civic matters through a knowledge of what the government does for them, and of what their duties as individuals are.

In order to correlate the class work with actual conditions we think it well to begin the fall term with a study of the elective offices of our city government to correspond to the primaries, registration and election during the months of September, October and November.

1. *Introduction:* Training the voter of tomorrow. A survey of what the government does for its citizens and of the duties of the citizen to the community.
2. *The part of the citizen in government:* Why active citizenship is necessary. How a person becomes a citizen. How a citizen takes part in the government.
3. *How the laws are carried out:* The mayor; duties and power; great responsibility of position. Responsibility of voter. Our city government as compared with the commission plan.
4. *Paying the city's bills:* The Board of Estimate and Apportionment. The budget. Means of obtaining money, etc.
5. *Making the laws:* City, State and National legislation affecting the citizen.
6. *Judicial action:* Need of courts — classes of courts — procedure.

7. *Public education*: Why and how the public manages schools.
8. *The city's water supply*: Sources, protection and administration of New York City's water supply.
9. *Protecting the Food of the City*: Dangers to which city dwellers are exposed. Work of City, State and National government.
10. *Guarding the health of the people*: Methods and agencies of health promotion. Work of Health Department. Relation of industry to health.
11. *Disposal of city wastes*: Need of community action; work of city departments. Individual responsibility and cooperation.
12. *Protection of life and property*: Need of community action. Police and Fire Departments.
13. *Regulation of buildings*: The problem of housing. Work of City and State government.
14. *Communication and transportation*: Dependence of civilized life upon communication and transportation. Means. Government control.
15. *Lighting and heating as public utilities*: Need of public action and government regulation.
16. *City planning*: Need of a city plan. Our system. Government agencies concerned.
17. *Civic beauty*: Value of beauty. City and state agencies. Individual responsibility and cooperation.
18. *Care of the City's wards*: Classes of unfortunates. Why a matter of public concern. Government and private agencies.
19. *Public regulation of work*: Why community action necessary. Government regulations. Individual responsibility.
20. *Public provision for recreation*: Importance of play space to the community.

NEW YORK CITY PUBLIC SCHOOLS

PRINCIPAL'S REPORT ON TEACHER'S SERVICE

District..... P. S..... Grade..... Sex of class..... Term ending.....
Teacher *Surname*
First

Time lost by absence and lateness
D..... H..... M.....

Number of times late 20 minutes before morning session or 10 minutes before afternoon session.....

INSTRUCTIONS: In rating teachers the abbreviations "S" for satisfactory and "U" for unsatisfactory are to be used.

A rating "U" must be accompanied by a statement indicating the teacher's specific weakness. Exceptional service is to be recorded by using one or more of the items given on the reverse side of this blank, and either specific weakness or exceptional service may be amplified by an explanatory statement. The "General Rating" shall be the mark expressing the principal's judgment for salary and license approval, without regard to entries under exceptional service or specific weakness.

The rating is to be based on a consideration of the following items: I Professional Attitude, II Instruction, III Discipline, IV Personal Attributes, V Routine. Professional Attitude, Instruction, and Discipline are to be regarded as major considerations. For further details, see handbook.

1 EXCEPTIONAL SERVICE [To be used for recording service: Above average, Very much above average]

2 SPECIFIC WEAKNESS [To be used for recording service: Below average, Very much below average]

3 REMARKS [This relative rating plan put in use Feb. 1, 1922]

NEW YORK CITY PUBLIC SCHOOLS
GUIDE FOR DETERMINING SUMMARIZED RATING
AND FOR RECORDING EXCEPTIONAL OR
UNSATISFACTORY SERVICE

I. PROFESSIONAL ATTITUDE	INDIVIDUAL COMMENT
A. Regularity of attendance and punctuality	
B. Coöperation	
C. Social service	
D. Volunteer activities	
E. Care of physical welfare of child	
F. Loyalty	
G. Self-improvement	
II. INSTRUCTION	
A. Use of English	
B. Knowledge of subject matter	
C. Skill in teaching	
1. Preparation	
2. Definiteness of aim	
3. Appropriateness of method	
4. Good questioning	
5. Thoroughness of drill	
6. Participation and interest of class	
D. Results obtained	
III. DISCIPLINE	
A. Control of class	
B. Training pupils in self-control	
C. Effect on attendance and truancy	
D. Character building	
IV. PERSONAL ATTRIBUTES	
A. Personal appearance	
B. Use of voice	
C. Cheerfulness	
D. Courtesy	
E. Self-control	
F. Initiative and demonstrated leadership	
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